



Department of Obstetrics and Gynecology 2017 Annual Report



Personalized Treatment | Unparalleled Expertise

Creating the best-possible patient experience drives the NorthShore University HealthSystem (NorthShore) Department of Obstetrics and Gynecology.

From participation in cutting-edge National Institutes of Health (NIH)-sponsored clinical trials to offering comprehensive and caring perinatal family support from our highly trained psychologists and social workers, our continuum of care relies simultaneously on both high-tech and high-touch interventions. The patient stories we highlight in this annual report are emblematic of this integrated and outstanding care.

We celebrated the opening of our newly transformed Women's Hospital at NorthShore Highland Park Hospital in 2017 as well as significant accomplishments throughout our Department, many of which are highlighted in this annual report.

I am exceedingly proud of what we accomplished in 2017. I am also grateful to our philanthropic supporters and to our entire team for our shared dedication to providing the most advanced, compassionate care to the patients and families we are privileged to serve.



Richard K. Silver, MD
The Auxiliary of NorthShore Chair of Obstetrics and Gynecology
Clinical Professor and Chief Academic Officer
Department of Obstetrics and Gynecology
NorthShore University HealthSystem



State-of-the-Art Women's Hospital



The new Women's Hospital at Highland Park Hospital featuring enhanced labor and delivery facilities and luxurious private rooms opened in 2017. The modernization is part of a multimillion-dollar, multiyear project to upgrade the facility and create a more patient-focused environment.

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Frank Tu, MD, MPH

Vice Chair of Quality, Division Director and Clinical Associate Professor

Collaborative Excellence in Gynecology

The Division of Gynecology promotes evidence-based procedural management of gynecological disorders throughout the continuum of outpatient and inpatient settings. Members are committed to lifelong and collaborative learning for the benefit of our patients. We enjoy a strong relationship with hospital-based quality in support of safety, cost-effectiveness and patient-centered care.

2017 Highlights

- Mary Wehmeyer and Mary Jo Sperling in NorthShore Quality have continued to promote the implementation of Enhanced Recovery After Surgery (ERAS) pathways in gynecology and obstetrics. Increased institutional commitment to expanding this program is anticipated in fiscal year 2018.
- The Division continues to strongly support a robust peer-review process of our ongoing care. A multidisciplinary Gynecology Quality Committee—chaired by Jeremy Miller, MD, and co-chaired by Janet Tomeszko, MD, convenes monthly. Cases for Committee review are selected from a list identified by specific criteria that may be related to surgical complications. The criteria include longer-than-expected operating time, intraoperative consultation, intraoperative transfusion, unanticipated Intensive Care Unit admission, postoperative febrile morbidity, thromboembolic events and readmission within 30 days.
- In 2017, the Committee reviewed 27 cases of which 15 percent were referred for additional review. The process continues to educate Department members with a goal of overall improved patient care and safety.

PIONEERING RESEARCH

Quality Improvement

In 2018, in collaboration with NorthShore's Quality leadership, our Department begins a new level of participation in the National Surgical Quality Improvement Project. All hysterectomy cases at all sites will be included in data collection, as well as selected sampling of other cases.

There is expectation that this will also inform our current peer-review process, as we will be able to better understand how our results benchmark with risk-adjusted peer-contributed data. Our current National Surgical Quality Improvement Program data indicates the Department scores well generally, although readmissions will be a point of focus in 2018.

PATIENT-CENTERED CARE



Dr. Thomas Aquisto (left) and Dr. Frank Tu work collaboratively to provide advanced treatment options and provide the best-possible outcomes for patients.

Advanced Care, Speedy Recovery for Busy Mom

Maria Mota has an extreme case of food poisoning to thank for the discovery of her pelvic aneurysm, but her gratitude goes to a collaborative team of NorthShore experts for lifesaving treatment.

Intense abdominal pain sent Mota to the Highland Park Hospital Emergency Department where imaging revealed an aneurysm adjacent to her uterus. The 39-year-old mother of two was understandably very nervous and in complete shock. After consulting with vascular surgeon Benjamin Lind, MD, Mota saw interventional radiologist Thomas Aquisto, MD, who initially treated her with vascular embolization, a conservative approach designed to save her uterus and spare her a hysterectomy.

A month after the procedure, imaging revealed that the aneurysm had persisted. "Because of the location, involving the uterine artery, and so many small branches, it was impossible to embolize all of them," said Dr. Aquisto, who then referred Mota to Frank Tu, MD, MPH, Director of the Division of Gynecological Pain and Minimally Invasive Surgery.

A recognized authority in minimally invasive hysterectomy, Dr. Tu acknowledged that Mota's situation was unusual. After some consultation with colleagues about the potential risk for her aneurysm to burst, they decided surgery to remove it was the best course of action.

Dr. Tu performed a laparoscopic hysterectomy, including a careful dissection to move her ureter out of the way before removing the uterus and the aneurysm.

"My experience with Dr. Tu was great. He explained everything in great detail to my husband and me. He did the procedure at 8 a.m. and by 2 p.m. that day I went home," said Mota. "I was amazed I got to go home that day; I felt great with only minimal pain. After a few weeks of resting at home I was back to work, and I was able to go back to exercising in two months."

Collaboration between Drs. Tu and Aquisto is not uncommon, but typically referrals go the opposite way with Dr. Tu sending patients to Dr. Aquisto for treatment of uterine fibroids or other pelvic issues.

"Having this collaborative approach and access to high-quality physicians is definitely a benefit to our patients," said Dr. Tu. "There are many different ways to help patients. More than 95 percent of our cases are now done with a minimally invasive approach, and we are always looking for the best ways to continually enhance safety and outcomes for patients."

"I feel lucky to live so close and have access to these high-quality physicians and resources," said Mota.

Mark Neerhof, DO
Division Director and Clinical Associate Professor

Marion Jelcz, MD
Associate Director and Senior Clinician Educator

Enhancing the Health of Pregnant Women and Infants

The Division of Obstetrics is dedicated to preserving and improving the health of women and newborn infants. We are focused on providing the highest standard of care both during and after pregnancy. We provide unsurpassed educational opportunities for students, residents and fellows in an effort to ensure that clinical excellence will be

perpetuated. We are also committed to increasing the body of knowledge in women's health through research.

There are 82 obstetricians, seven family practitioners and 10 midwives providing obstetric care at NorthShore. In fiscal year 2017, 4,665 mothers delivered 4,727 babies at NorthShore Evanston and Highland Park Hospitals. Evanston

Hospital also serves as a tertiary referral center for patients with pregnancy complications in the north and northwest suburbs of Chicago.

2017 Highlights

- The cesarean section rate at NorthShore continues to compare favorably to other institutions. Data

PIONEERING RESEARCH

Reducing Risks for At-Risk Populations

As a maternal-fetal medicine physician, Ann Borders, MD, MSc, MPH, has a deep interest in understanding patterns of adverse pregnancy outcomes via clinical research and implementing programs to address these adverse outcomes.

Dr. Borders' clinical research focuses on investigating the social and biological mechanisms that underlie preterm delivery and other pregnancy complications, a significant cause of morbidity and mortality in the United States affecting at least 10 percent of all births. For some populations, especially low-income women and women of color, rates of preterm delivery are as high as 15 to 20 percent.

Dr. Borders' work places special focus on the role of chronic maternal psychosocial stress in preterm birth risk, particularly for vulnerable populations.

Dr. Borders' previous work has demonstrated higher self-reported stress and biomarkers of stress among low-income women as well as black and Hispanic women, and a relationship between higher stress and adverse birth outcomes. Recently, her research has indicated that elevated inflammatory markers in maternal circulation and greater presence of inflammation in the placenta may serve as a key mechanism whereby stress "gets under the skin."

A small pilot study found that group prenatal care may be able to ameliorate socioeconomic and racial disparities in placental inflammation, with implications for maternal and infant outcomes.

In recognition of the significance of this work, Dr. Borders (co-principal investigator) and Northwestern University's Gregory Miller, PhD (principal investigator) were awarded a five-year, \$3.5 million R01 from the National Institutes of Health (NIH) Office of Minority Health and Health Disparities for their project entitled "Understanding socioeconomic disparities in perinatal risk: The role of epigenetic and transcriptional regulation in the placenta."

In addition, Dr. Borders was awarded a NorthShore Pilot Grant for a collaborative effort with researchers in Greenville, South

Carolina, to collect maternal serum and placental samples from women participating in a randomized trial of group prenatal care versus routine prenatal care.

Because of that pilot work, the team currently has an R01 submission under review by the NIH that would extend sample collection to 1,500 women. This project will lead to improved understanding of the underlying mechanisms by which psychosocial interventions such as group prenatal care can counter the physiologic impact of maternal stress and improve pregnancy outcomes.



Dr. Ann Borders' team is leading innovative research initiatives aimed at improving pregnancy outcomes for vulnerable populations. (From left) Dr. Lauren Keenan-Devlin, Dr. Borders, Dr. Linda Ernst and Northwestern University's Dr. Gregory Miller are key partners in these initiatives.

compiled by the National Perinatal Information Center demonstrates that at NorthShore, the cesarean section rate is lower and the vaginal birth after cesarean (VBAC) rate is higher when compared to a subgroup of similar institutions (academic regional perinatal centers) as well as to the entire database that includes all types of hospitals. Our commitment to clinical excellence has resulted in favorable outcomes for our patients.

- The outstanding quality of obstetric care provided at NorthShore in 2017 was reflected in Press Ganey patient satisfaction scores that place us in the 91st percentile nationwide among all obstetric care providers.
- Over the last year, the Division of Obstetrics has conducted educational programs for physicians and nurses. These programs focused on two of the most common obstetric emergencies; hemorrhage and hypertension.

We focused on working as a team to identify these complications and initiate treatment in a timely fashion in order to optimize patient outcomes.

All of our physicians and nurses also completed an online course in fetal heart rate monitoring, an essential tool for providing safe intrapartum care. We maintain a commitment to ongoing education of all care providers in an effort to maintain clinical excellence.

Division Committees

The following are multidisciplinary committees that are active in the Division:

- **The Obstetrics Practice Committee** reviews, updates and publishes practice guidelines for the Division.
- **The Perinatal Morbidity and Mortality Committee** reviews the care surrounding clinical complications and adverse outcomes.
- **The Obstetric Multidisciplinary Performance Improvement Committee** reviews quality data and implements initiatives and training programs in an effort to maximize patient safety.

Obstetrics 2017 Clinical Outcomes

	NorthShore	Subgroup Average	Database Average
Total Deliveries	4,665	3,750	3,489
Babies	4,727	3,865	3,542
Primary CS	13.3%	19.0%	17.5%
Repeat CS	12.9%	13.9%	15.4%
Total CS	26.2%	32.9%	32.9%
VBAC Rate	21.2%	19.3%	13.9%

PIONEERING RESEARCH



Dr. Ann Borders' team is driving quality care for mothers and babies across the state with collaborative efforts engaging a wide range of stakeholders. (From left) Daniel Weiss, Dr. Borders, Danielle Young and Northwestern University's Dr. Patti Lee King.

Collaborative Develops Best Practices

Dr. Borders has also devoted her expertise in high-risk obstetric medicine to state-wide and national quality improvement in perinatal medicine.

In 2012, Dr. Borders helped create the Illinois Perinatal Quality Collaborative (ILPQC), for which she currently serves as the Executive Director and Obstetric Lead. ILPQC is a collaborative focused on improving health outcomes for women and newborns with over 100 birthing hospitals in Illinois covering more than 99 percent of births and 91 percent of Neonatal Intensive Care Unit beds in the state. ILPQC's mission is to engage perinatal providers, nurses, public health leaders and other stakeholders in a collaborative effort to improve the quality of prenatal care and health outcomes for Illinois women and infants using quality improvement science, rapid response data, opportunities for collaborative learning and evidence-based practice guidelines.

Past successes for ILPQC include a reduction in early elective deliveries at 37–38 weeks gestation from 2.33 to 1.81 percent and a reduction in very low birth weight infants discharged with weights <10th percentile from 45 to 33 percent in 2013/2014, an increase in birth certificate accuracy of 17 key variables from 87 to 97 percent in 2014/2015, and an increase in the percentage of women treated for severe hypertension within 60 minutes from 42 to 84 percent.

Dr. Borders serves on the Executive Council for the National Network of Perinatal Quality Collaboratives, supported by the CDC. She also serves on the American College of OB/GYN (ACOG) Committee on Obstetric Practice.

ILPQC has embarked on two exciting new initiatives—Dr. Borders and her team have been awarded a five-year \$1 million grant from the CDC and IDPH to facilitate initiatives to implement best practices for mothers and newborns affected by opioids, and they have also received a two-year \$726,000 grant from the JB and MK Pritzker Family Foundation to increase by 75 percent immediate postpartum long-acting reversible contraception (IPLARC) insertion.

Gustavo Rodriguez, MD
 Division Director and Clinical Professor
 Matthews Family Chair of Gynecologic Oncology Research

Improving Outcomes in Gynecologic Oncology

Intensive international research efforts and advances in surgery, chemotherapy and novel biological agents over the past decade are leading to improved outcomes in women with gynecologic cancers, including higher cure rates.

The Division of Gynecologic Oncology has been at the forefront of progress, supporting an aggressive clinical and research program aimed at prevention, early detection, improved treatment and survivorship for ovarian, uterine and other women's cancers. Led by Gustavo Rodriguez, MD, the Division sees patients at all four NorthShore Hospitals and brings together a collaborative team that employs a multidisciplinary approach to treating women with malignant or premalignant conditions of the gynecologic tract.

The Division's mission is to provide comprehensive and compassionate care to our patients while performing basic and clinical research that will make a significant impact in our community and beyond.

Patients benefit from the collaborative care and the combined experience of gynecologic oncologists, geneticists, radiologists, radiation oncologists, pathologists and critical support services, including psychosocial oncology, integrative medicine and nutrition.



Our newest partner, Dr. Mary Tilley Jenkins Vogel, has now fully integrated her clinical services throughout the NorthShore system, with a special focus on expanding access and care at NorthShore Glenbrook Hospital. She has initiated clinical studies with a focus on pharmacologic prevention of endometrial cancer.

We leverage the latest technology and innovative techniques with robotic surgery and other minimally invasive procedures through our minimally invasive program (among the most active in gynecologic oncology in the Chicago area).

2017 Highlights

- The outstanding quality of care provided by the Division has been recognized by third parties, including Press Ganey, with scores that are near the top for the NorthShore Medical Group and in the top 5 percentile nationally as compared to peers.
- A major emphasis of the Division in the past year has been the development of a robust survivorship program, spearheaded by Carolyn Kirschner, MD. The goal of the program is to enhance the quality of life of our patients and their families by helping them address and overcome the many physical, psychological, social and economic challenges associated with the fight against cancer.
- An array of important clinical trials ensures that our patients have access to the latest treatment options for women's cancers. The Division's clinical trials program is led by Jean Hurteau, MD, who has served as a principal investigator for translational research projects with the National Cancer Institute-funded NRG. Important clinical trials open this year have included a trial evaluating the new class of PARP inhibitors in women with recurrent ovarian cancer.
- A major clinical and research focus of the Division is the area of cancer prevention. Dr. Rodriguez and his team have made important discoveries that are opening the door toward the pharmacologic prevention of ovarian and uterine cancer. Work continued with support from federal grants and in collaboration with scientists at Harvard University, Inova Health System, University of Arizona and Walter Reed Army Medical Center.
- Many women in our community have an increased genetic-based risk for both breast and gynecologic cancer and can benefit from a personalized approach to cancer prevention and treatment.

Advancing Palliative Care

Our palliative care initiatives are being spearheaded by Elena Moore, MD, in collaboration with the NorthShore palliative care and hospice teams. This has included both clinical initiatives as well as research as we seek to mitigate the side effects/toxicity and symptoms associated with gynecologic cancer and its treatment.

Dr. Moore is the principal investigator of a study evaluating the impact on quality of life and survival of early involvement of the palliative care team in the care of women with gynecologic cancers. She was also the recipient this past year of a Departmental Innovation Grant critically evaluating chemotherapeutic approaches for women with advanced ovarian cancer.



Dr. Elena Moore

Building on the significant success of Dr. Rodriguez's research—which is generously supported by Bears Care, the charitable beneficiary of the Chicago Bears; The Auxiliary of NorthShore University HealthSystem; Ron Schutz, in memory of his wife Sandy; and other grateful patients—the Clinical Gynecologic Cancer Prevention Program at NorthShore includes risk assessment and evaluation, followed by individualized pharmacologic and surgical strategies for cancer preventive care.

- A new support fund to provide psychosocial, integrative medicine and quality of life services to gynecologic oncology patients with financial need was established by an anonymous donor.



Promising research aimed at preventing ovarian cancer continues to garner national attention for Dr. Gustavo Rodriguez (right) and his team: (from left) Jane Turbov, Dr. Larry Thaete and Rebecca Rosales.

National Cancer Institute of the National Institutes of Health awarded \$1.7 million to fund Dr. Rodriguez's ovarian cancer research

Gustavo Rodriguez, MD, has devoted his scientific inquiry to the study of ovarian cancer and its prevention. Ovarian cancer remains a significant public health problem. It is the fifth leading cause of cancer-related mortality in women in the United States, causing more deaths than all other gynecologic malignancies combined.

As a consequence of the nonspecific subtle symptoms associated with early-stage ovarian cancers, along with a lack of an effective screening test, most women present with advanced-stage malignancy. For these women, overall survival remains poor (less than 30 percent).

Dr. Rodriguez focuses on the immense potential to decrease ovarian cancer incidence and mortality through prevention. Extensive epidemiological evidence has shown that routine use of the combination estrogen-progestin oral contraceptive (OC) confers a remarkable 30–50 percent reduction in the risk of developing subsequent ovarian cancer.

Based on his own research findings, Dr. Rodriguez and his team believe the progestin component of the OC is functioning as a chemopreventive agent by activating potent and well-known chemopreventive molecular pathways in the gynecologic tract.

His lab has discovered that progesterone and vitamin D have synergistic, not simply additive or independent, inhibitory effects on ovarian cell survival. This effect is characterized by a marked increase in cell death via apoptosis, a molecular program that serves to clear cancer or other genetically damaged cells. Based on their extensive prior work, Dr. Rodriguez and his team hypothesized that vitamin D with progestin will be an ideal way to enhance progestin potency while minimizing the side effects/risks associated with chemoprevention in women who are well. Their goal is to develop this combination for fallopian tube/ovarian cancer prevention.

A growing body of evidence suggests that the fallopian tube may be the site of origin of many high-grade ovarian cancers, creating an opportunity for identifying molecular targets in the fallopian tube for effective ovarian cancer prevention.

The work of Dr. Rodriguez's lab had previously focused primarily on the ovarian surface epithelium as the biologic target for ovarian cancer prevention. Little is known regarding biologic effects of progestins and vitamin D in the fallopian tube. He and his team hypothesize, however, that progestins will confer biologic effects similar to what we have observed in the ovary and endometrium.

Scott MacGregor, DO
Vice Chair for Specialty Care, Division Director and Clinical Professor

Commitment to Quality Maternal-Fetal Medicine

The Division of Maternal-Fetal Medicine (MFM) is a group of specialists committed to clinical service, research and educational opportunities related to patients with high-risk pregnancies.

The Division's commitment to quality and loyalty is evident in the Fetal Diagnostic Centers (FDCs) of the Centers for Maternal and Fetal Health (CMFH) at NorthShore Evanston Hospital and in each of the seven satellite sites throughout the north and northwest Chicago metropolitan area. The CMFH consolidates the services of the Division of Maternal-Fetal Medicine and the FDC offering integrated and advanced technology and services.

2017 Highlights

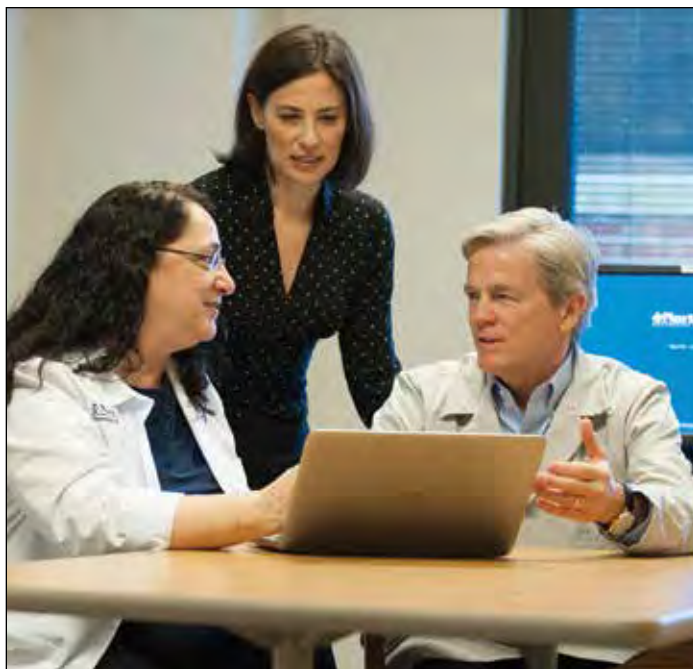
- Our group's primary clinical site is Evanston Hospital; however, we also provide services at seven other FDC sites in NorthShore Glenbrook Hospital, Highland Park Hospital, Lake Forest, St. Francis–Evanston, Arlington Heights, Libertyville and Gurnee.
- The Fetal Diagnostic Centers provided over 30,000 services annually. The centers are American Institute of Ultrasound in Medicine (AIUM) certified. Our ultrasonographers maintain certification in first trimester genetic screening (both nuchal translucency and nasal bone), and the CMFH continues to be one of the leaders in genetic screening and testing for fetal aneuploidy.

- Our Division has continued its commitment to clinical and laboratory research with a number of new projects developed during the past fiscal year.

Beth Plunkett, MD, MPH, is the Director of Research for the Department of Obstetrics and Gynecology. The Division currently has over 20 active, institutional review board-approved clinical trials. These research efforts have resulted in numerous presentations at leading scientific research meetings and numerous publications in leading peer-reviewed journals.

- We are one of only 14 clinical trial centers of the National Institute of Child Health and Human Development (NICHD)-sponsored MFM Unit Network under the direction of Dr. Plunkett (site principal investigator).

The MFM Unit participation allows our patients access to the most innovative and important clinical trials. Recent studies have included a randomized placebo-controlled trial of antenatal late preterm steroids, a randomized placebo-controlled trial in patients at risk for congenital cytomegalovirus infection, a trial screening patients for HCV, a randomized trial comparing treatments in patients with twin pregnancies and shortened cervix to reduce preterm delivery, and a randomized trial comparing treatments in singleton pregnancies with shortened cervix to reduce preterm delivery.



Dr. Scott MacGregor, who leads the Division of Maternal-Fetal Medicine, confers with Certified Nurse Midwife Gina Russano (left) and Christen Scozzafave of the Perinatal Family Support Center.

MFM Wins at Society for Maternal-Fetal Medicine (SMFM) Conference

Ann Borders, MD, MSc, MPH, and Lauren Keenan-Devlin, PhD, MPH, authored three orals for the Society for Maternal-Fetal Medicine (SMFM) 2018 conference on Feb 1. Two of those orals were given by Dr. Borders in Plenary 1 and won prestigious awards from the Society.

From the Measurement of Maternal Stress (MOMS) study, the abstract "DNA methylation of genes in the maternal HPA axis during pregnancy is linked with birth outcomes" won the Dru Carlson Memorial Award for Best Research in Ultrasound and Genetics.

From the Illinois Perinatal Quality Collaborative (ILPQC) Severe Maternal Hypertension Initiative team, including Patricia Lee King, PhD, NorthShore Research Affiliate, the abstract "Reducing time to treatment for severe maternal hypertension through statewide quality improvement" won the Norman F. Gant Award for Best Research in Maternal-Fetal Medicine and was awarded Best Plenary 1 Oral Presentation for the 2018 conference.

The third oral, "Early-term deliveries are associated with a reduced likelihood of exclusive breastfeeding," also from the MOMS study, was presented by Yetunde Fatunde Awosemusi, MD, a recent NorthShore Obstetrics and Gynecology resident graduate.

Pioneering Study Drives Improved Fetal Outcomes

It was a fluke that Rose Elias learned that she had been infected with CMV (cytomegalovirus) while pregnant with her second child. The 34-year-old Chicago psychologist happened to have a 14-week ultrasound at Evanston Hospital, where she was asked by a research nurse if she wanted to be screened for CMV with a simple blood test.

Most people in the United States are infected with CMV during childhood or as adults if they work around children. The common viral infection typically has few if any symptoms in adults but can cause neurologic complications for babies born to women who contract CMV while pregnant.

Currently pregnant women are not routinely screened for CMV, but NorthShore is one of 12 centers across the country participating in an NICHD randomized controlled trial designed to determine whether screening for CMV should become routine practice, and if there is an effective treatment to prevent negative consequences for the baby.

Although CMV is very common, Elias—like most people—had never heard of it or the potential for harm to her baby, and was initially very upset. She was invited to join the study. After talking with her physician and midwife, she and her husband agreed to switch her care to NorthShore and take part in the study, which includes regular ultrasounds and an infusion treatment every four weeks. Because the study is randomized and blinded, neither Elias nor her physicians know if she is receiving the CMV antibodies designed to help the immune system destroy the CMV or if she is receiving a placebo. But everyone in the study is monitored closely and the babies are screened carefully at birth, and at 1 and 2 years of age.

“To me, the main benefit of being in the study is all the additional screening,” said Elias, who is comforted that all of her ultrasounds and exams have been normal and no cause for alarm. “It’s been a good experience as all the nurses and techs have been very nice and the physicians have helped explain



Patient Rose Elias participated in a national trial aimed at CMV screening at NorthShore, one of 12 centers across the country involved in the National Institute of Child Health and Human Development (NICHD) study. Dr. Beth Plunkett (right) leads the Division of Research and Nurse Rita Elue (center).

everything very clearly. Knowing that we’re getting so much extra attention helps me stay calm.”

Like many patients involved in major studies like this, Elias is happy to contribute to research that can lead to improved care for pregnant women and their babies.

As a member of the NICHD MFM Units Network, the Division of Research led by Director Beth Plunkett, MD, MPH, plays a key role in these advanced clinical trials designed to improve maternal and fetal outcomes.

“It’s an honor and a privilege to offer our patients the opportunity to participate in these studies and to contribute to vital work that’s changing clinical practice,” said Dr. Plunkett.

“We’re really proud of our Department and NorthShore’s commitment to research and the chance to be at the cutting edge in these landmark trials while maintaining our focus on the health, safety and well-being of our patients.”

Frank Tu, MD, MPH
Division Director and Clinical Associate Professor

Advancing Minimally Invasive Surgery

The Division of Gynecological Pain and Minimally Invasive Surgery (GPMIS) brings the skills and experience of subspecialists in female pelvic pain disorders and laparoscopic surgery to the NorthShore clinical, academic and research community.

2017 Highlights

- Gerald Gebhart, PhD—an emeritus professor from the University of Iowa and prior Director of the Center for Pain Research at the University of Pittsburgh—formally joined the Division research team as a mentor. Dr. Gebhart has served as president of both the American Pain Society (1997) and International Association for the Study of Pain (2008–10). His prior research includes over 450 publications, mostly on visceral pain—the focus of the Division laboratory. Dr. Gebhart directs a weekly journal club for the Division research laboratory and has provided assistance with relevant research projects.
- Sangeeta Senapati, MD, MS, Site Director for the Graduate Medical Education Program of the Obstetrics and Gynecology Residency Program at the University of Chicago Pritzker School of Medicine, was promoted to Clinical Associate Professor. She also has begun her first year as a prestigious American Board of Obstetrics and Gynecology examiner.
- Members of the Division made numerous invited presentations regionally, nationally and globally.
 - Dr. Senapati served as faculty for the American Congress of Obstetricians and Gynecologists ASSESS course on Assessing Your Skills with Simulated Vaginal and Laparoscopic Hysterectomy.
 - Diana Atashroo, MD, spoke at the Society of Laparoscopic Surgeons on Causes of Genital Pain. She also spoke at Grand Rounds on Understanding Vulvar Pain: Clinical Update in Diagnosis and Management. She also gave the presentation on Oral Contraception and Associated Interactions for the Internal Medicine Symposium at NorthShore in November.
 - Frank Tu, MD, MPH, was the moderator for the AbbVie-sponsored symposium at the 3rd World Congress on Abdominal and Pelvic Pain (WCAPP) in Washington, D.C., on reducing the burden of



Dr. Sangeeta Senapati (left) and Dr. Diana Atashroo play active roles in the Gynecological Pain and Minimally Invasive Surgery Division and larger academic and research community.

endometriosis through a multidisciplinary approach, and spoke on Current Challenges in Diagnosis of Endometriosis-Associated Pelvic Pain.

- The GPMIS Division remained active with the AAGL Global Congress in 2017.
 - Dr. Sangeeta Senapati gave a video presentation on functional phenotyping of menstrual pain and was faculty for the cadaver lab course on Laparoscopic Hysterectomy Made Ridiculously Simple.
 - Dr. Diana Atashroo was also invited as faculty for the 46th Congress of American Association of Gynecologic Laparoscopic Surgeons laparoscopic simulation course: Teach the Teacher. She also serves as faculty and spoke at the AAGL Pelvic Pain and Cadaveric Course in Phoenix, AZ, this December.
 - Dr. Frank Tu was faculty for the AAGL postgraduate course Neuropelvicology: A Systematic Approach to the Diagnosis and Management of Complex Pelvic Pain and Pelvic Neuropathies.
- Dr. Diana Atashroo completed her first year of service on the board of International Pelvic Pain Society, and Dr. Tu was part of the program committee for the 3rd biennial WCAPP in Washington, D.C. The Division had three presentations there as part of the scientific sessions.
- Significant recent published contributions toward improvement for treating menstrual pain include the development of a mouse model and clinical guidelines for treating refractory cases.

Carolyn Kuhn, MD, a resident physician under the supervision of Kevin Hellman, PhD, won “best paper” award for her paper on functional-MRI of the uterus during spontaneous menstrual cramps presented at the Chicago Gynecological Society. Work by their team, including six other students, was presented at the Society for Reproductive Investigation, University of Michigan and other nearby

Training the Best Surgeons

NorthShore, in collaboration with the University of Chicago, will be home to a new two-year fellowship in minimally invasive gynecologic surgery under the auspices of the AAGL (American Association of Gynecologic Laparoscopists).

Led by Sangeeta Senapati, MD, MS, the highly competitive fellowship will provide advanced training for treatment of endometriosis, fertility sparing procedures for uterine fibroids, chronic pelvic pain and more.

“We are very excited about bringing this opportunity to NorthShore to train the next generation of minimally invasive gynecologic surgeons,” said Dr. Senapati. The first fellow will be selected in 2019.

Studies Aimed at Preventing Pelvic Pain

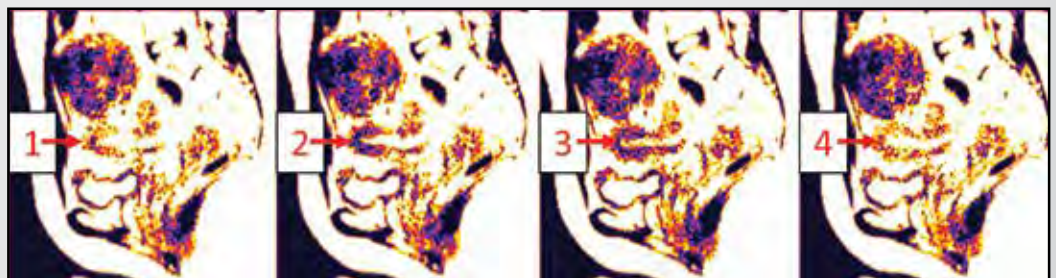
Kevin Hellman, PhD, and Frank Tu, MD, MPH, received a two-year grant, titled “Noninvasive imaging of uterine physiology to improve treatment for dysmenorrhea,” from the National Institute of Child and Human Development.

Dr. Hellman, a pain scientist, and Dr. Tu, a clinical researcher, have been collaborating within the Division of Gynecological Pain and Minimally Invasive Surgery for the past seven years to better understand the causes of women’s pain conditions and how to prevent them.

One in six women suffer from menstrual cramps (dysmenorrhea) and often miss school or work as a result. Their research has shown that menstrual pain has long-term effects on pain sensitivity. Conversely, most women with debilitating chronic pelvic pain have a history of menstrual pain. Thus, a better understanding of the mechanisms responsible for menstrual pain could ultimately lead to better treatments and prevention of chronic pelvic pain conditions. Drs. Hellman and Tu’s lab is one of the few labs in the world that explicitly study menstrual pain.

It is commonly believed that during menses, inflammatory molecules cause high-pressure uterine contractions that result in pain due to insufficient blood oxygenation. Drs. Tu and Hellman’s lab recently published a paper demonstrating this finding in an animal model. Although uterine contractility and oxygenation are commonly held as responsible for menstrual pain, confirmatory human data from validated noninvasive tests are missing.

Without scientific tools to properly investigate the mechanisms of both normal and pathologic uterine physiology, diagnostic tests that could determine the use of targeted treatments are not attainable. Therefore, Dr. Tu and Dr. Hellman have developed noninvasive methods (ultrasound, MRI and electrophysiology) to study women with dysmenorrhea.



Continuous series of color intensity coded MRI from participant with menstrual pain with images spaced 10 seconds apart. The series shows the period before (1) the start of myometrial activity beginning at the fundus (2), propagating toward the cervix (3), and returning to normal (4). The participant experienced a cramp 15 seconds after onset (2). The consistent temporal relationship between spontaneous myometrial activity and self-reported pain supports the hypothesis that myometrial contractions cause menstrual pain.

Preliminary data provide the first noninvasive evidence in humans that transient periods of reduced uterine oxygenation occur during episodes of menstrual cramping pain. Presentations of these results received top awards at the International Pelvic Pain Society and the Chicago Gynecological Society.

Additionally, their research program also studies treatments for menstrual pain as part of a five-year NIDDK-funded program that examines benefits of medications for dysmenorrhea to prevent chronic pelvic pain. They have published a comprehensive review on treatment for the most difficult cases of menstrual pain. It is evident that additional research is needed to discover options for treatment-resistant patients.

To identify the causes of menstrual pain in treatment-resistant patients, Dr. Hellman and Dr. Tu propose to use MRI-based methods. To this end, they recently obtained a \$435,000 grant from the National Institute of Child and Human Development to further develop MRI-based methods for clarifying the mechanisms responsible for menstrual pain.

“The supportive leadership and experts in uterine physiology in our Department and research team is the key reason why our research program has been able to develop novel research methods for this important area of women’s health,” said Dr. Hellman.

universities.

- Drs. Frank Tu and Kevin Hellman will soon enroll the 300th participant in their clinical trial of dysmenorrhea mechanisms, Chronic Pain Risk Associated with Menstrual Period Pain (CRAMPP) supported by their National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) R01 grant.
- Folabomi Oladosu, PhD, received a prestigious minority training fellowship from the National Institutes of Diabetes and Digestive and Kidney Diseases (NIDDK) to extend the goals of Division’s research program on menstrual and bladder pain. Dr. Oladosu is studying the neural mechanisms responsible for the transition from acute to chronic pain by examining autonomic and brain activity in study participants.
- Dr. Oladosu, Dr. Hellman and Dr. Tu were awarded a NorthShore Pilot award to study the mechanisms of migraine headache. Menstrual migraine affects nearly one in four women and is often

resistant to treatment. Research from this award could elucidate the vascular mechanisms responsible for the development of better treatments.

- Dr. Tu, as Co-Investigator, and the GPMIS Division continue to collaborate on two NIDDK-funded studies of bladder pain syndrome (ICEPAC) with Thomas Chelimsky, MD, at the Medical College of Wisconsin and David Klumpp, PhD, at Northwestern University. Dr. Senapati has also begun a drug trial for Allergan to conduct a Phase 3 trial of ulipristal for leiomyoma-related symptoms.
- Dr. Tu joined the editorial board for the *Journal of Obstetrics and Gynaecology Canada*, and also was an invited participant for the Society of Interventional Radiology peripheral vascular disorders research working group. He also served on the National Center for Complementary and Integrative Health (NCCIH), an institute of the NIH grant review section.

Sigal Klipstein, MD
Division Director and Clinician Educator

At the Forefront of Reproductive Endocrinology and Infertility

NorthShore has 11 physicians who specialize in reproductive endocrinology and infertility (REI). These physicians are affiliated practitioners operating in a variety of practice models. One of the most commonly encountered problems in obstetrics and gynecology is infertility, which affects approximately 15 percent of the population.

Over the last 30 years, great strides have been made in providing treatment for individuals and couples experiencing infertility. The repertoire of available treatments continues to expand as technology evolves in this dynamic field, and we are helping more women achieve their goal of conceiving and delivering a healthy baby.

Fertility preservation for women with cancer by freezing eggs prior to exposure to chemotherapy has become highly successful and is no longer considered experimental. Egg freezing as a means of safeguarding fertility for women who wish to delay childbirth has seen increased utilization in recent years, and it continues to be an option for women who plan to have children and wish to preserve their eggs prior to the age-related decline in fertility.

2017 Highlights

- NorthShore REI Division members make important contributions to the field as reviewers and editors for many of the specialty's major journals.

Allison Rodgers, MD, serves as a reviewer for both *Human Reproduction* and *Fertility and Sterility*.

Carolyn Coulam, MD, is a recognized expert in the field of reproductive medicine serving on more than a dozen scientific journals including *Human Reproduction*, *Fertility and Sterility*,

Reproductive BioMedicine Online, *Journal of Assisted Reproduction and Genetics*, *American Journal of Reproductive Immunology* and the *Journal of Reproductive Immunology*.

Sigal Klipstein, MD, is a reviewer for the *Journal of Assisted Reproduction and Genetics* and *Fertility and Sterility*.

Susan Davis, MD, served as a reviewer of abstract submissions at the American Society for Reproductive Medicine 2017 Scientific Congress & Expo.

- Educating the next generation of physicians is a priority for Division members. John Rinehart, MD, PhD, JD; Dr. Rodgers; Shweta Nayak, MD; and Dr. Klipstein serve as medical student lecturers and mentor students in the office setting.

Drs. Rodgers and Nayak participated in the third-year medical students' Objective Structured Clinical Examination, to evaluate their ability to apply knowledge in the clinical environment.

Dr. Nayak also partnered with Michael Hughey, MD, the Associate Site Director for NorthShore medical student rotations, to develop online didactics on the topics of amenorrhea and the infertility evaluation.

- The NorthShore subspecialists in REI also continue to make significant contributions to continuing education opportunities for physician colleagues.

Dr. Rodgers was the Mann lecturing professor at MetroHealth Medical Center, an affiliate of Case Western Reserve University, where she also was a judge for resident research day.

Dr. Klipstein presented "Managing Conflicts Between Physician Autonomy and Patient Choice" at the University of Chicago Department of OB/GYN. Dr. Klipstein also presented Grand Rounds on the topic of reproductive ethics at the MedStar Washington Hospital Center Department of Obstetrics and Gynecology Grand Rounds.

Dr. Klipstein participated in the Harvard Medical School Annual Bioethics Conference where she presented a talk entitled "Where have all the designer children gone?"

- The regional, national and international communities benefit from the contributions of our REI specialists.

Dr. Nayak has served our local community lecturing on "Oocyte Cryopreservation" to the members of the Junior League of Chicago.

Dr. Rodgers serves as the "Ask Dr. Rodgers" medical expert on the Beat Infertility website and their podcasts supporting women facing infertility.

Dr. Klipstein completed a three-year term as Chair of the Committee on Ethics for American College of Obstetricians and Gynecologists (ACOG). Dr. Klipstein is currently a member of the Ethics Committee of the American Society for Reproductive Medicine.



Educating a patient on the use of injectable medications to stimulate her ovaries for in vitro fertilization to acquire embryos. The embryos will be screened with preimplantation genetic testing to avoid the transmission of an inherited disease.

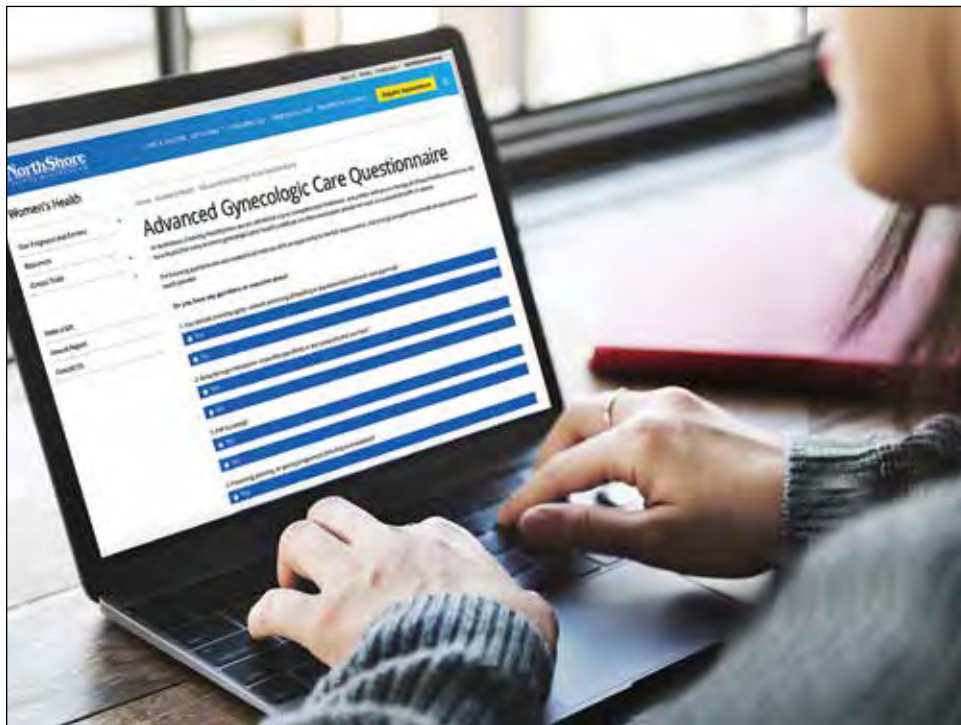
Roger Goldberg, MD, MPH
Division Director and Clinical Associate Professor

Leaders in Urogynecology and Reconstructive Surgery

The Division of Urogynecology and Reconstructive Surgery is dedicated to improving the care of women with a variety of pelvic floor abnormalities including bladder and bowel incontinence, pelvic organ prolapse, lower urinary tract pain and infection disorders, voiding dysfunction, and defecatory dysfunction.

The Division is actively involved in the education of University of Chicago Pritzker School of Medicine residents and medical students and also continues an Accreditation Council for Graduate Medical Education-approved three-year Female Pelvic Medicine and Reconstructive Surgery (FPMRS) fellowship.

The physicians and clinical staff are recognized nationally and internationally as a premier resource for clinical care, surgical expertise, research, informatics and quality outcomes tracking in urogynecology.



2017 Highlights

- Roger Goldberg, MD, MPH, and the Division of Urogynecology, with support from the NorthShore Medical Group Obstetrics and Gynecology Innovation Grant, developed and implemented the NorthShore Women's Health Questionnaire.

In 2017, this NorthShoreConnect-based questionnaire was successfully piloted, followed by full implementation to reach all female patients receiving their primary care in the medical group.

This project is unique to NorthShore and is designed to recognize conditions and symptoms that can severely impact overall health and quality of life, and efficiently and tactfully direct these impacted patients to high-quality care.

The first stage of implementation indicated great success in initiating conversations, facilitating appropriate specialty referrals, and establishing care pathways that improve patient outcomes as well as overall patient experience.

- Peter Sand, MD, as Director of Research for the Division, is principal investigator for several new and ongoing studies including the novel use of periurethral myoblast injection for the nonsurgical treatment of stress urinary incontinence and the use of percutaneous tibial nerve stimulation for the treatment of overactive bladder.

A new Women's Health Questionnaire was successfully piloted at NorthShore last year and aims to improve overall health and quality of life for female patients. The questionnaire is now available at northshore.org and NorthShoreConnect.

- Adam Gafni-Kane, MD, assumed the role of Interim Fellowship Director and now oversees the three-year training program in FPMRS. Dr. Gafni-Kane also serves as Chair of the NorthShore Patient Engagement Committee. Clinically, he has been extremely successful in his efforts to expand Division coverage into Lake County.
- Janet Tomezsko, MD, contributes her expertise on the NorthShore Operating Room Committee and continues to serve on periodic medical missions to Bolivia.

In 2017, the Division also launched its new Defecatory Dysfunction Clinic (DDC), a multidisciplinary effort to improve diagnosis and treatment of women with complex bowel symptoms such as obstructive defecation and anal incontinence. This program uses innovative office-based 3-D pelvic floor ultrasonography to identify previously unseen pelvic floor defects that may contribute to bowel dysfunction, along with a multidisciplinary team approach bridging across expertise in physical therapy, gastroenterology and colorectal surgery.

SPECIAL PROGRAMS Evanston Perinatal Center

Scott MacGregor, DO
Director for Maternal-Fetal Medicine

Bill MacKendrick, MD
Director for Neonatology

Myra Sabini, RNC-OB
Perinatal Center Coordinator

Ensuring Quality Care Throughout the State

The Evanston Perinatal Center is one of the three Level III centers in the Northwestern Perinatal Network, which is one of 10 regional perinatal centers in Illinois and is supported by federal and state grants. This regionalized perinatal system was created to provide quality maternal-fetal and neonatal care services to the families in all regions of Illinois.

Currently our perinatal program serves eight referral hospitals in Chicago and the north and west suburbs by promoting professional collaboration, consultation, education and communication to improve the health of pregnant women and their babies within the multiple communities we serve.

2017 Highlights

- Collaborates with referring hospitals for high-risk management and acceptance of maternal and neonatal transports. In 2016, Evanston Hospital accepted 109 maternal and 32 neonatal transports. The referring hospitals support more than 15,000 delivered women, which is part of the largest percentage of delivery volume within the Illinois Perinatal Program.
- Acts as a liaison and resource to the hospital and to the community by supporting network activities to meet perinatal grant rules and guidelines thus adding value, expertise and quality to non-NorthShore practices across Northern Illinois.
- Provides 24-hour tertiary center obstetrical and neonatal consultation to increase early identification of maternal-fetal and neonatal problems and to expedite consultation/referral to our tertiary care center, as needed.

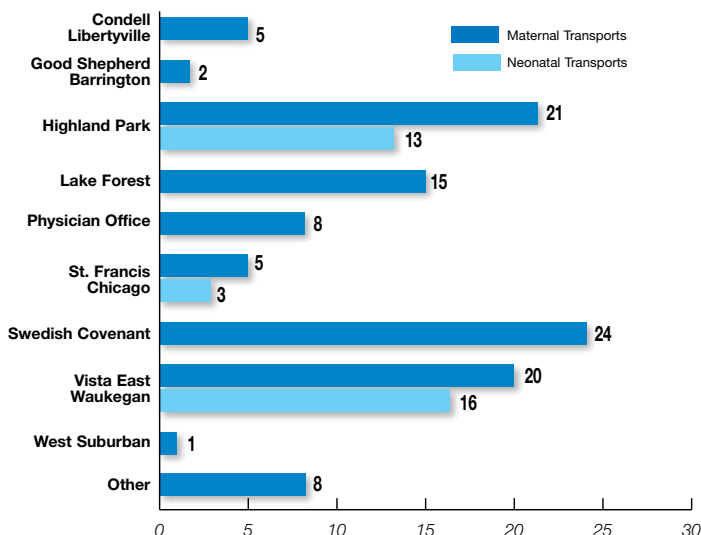
- Coordinates professional educational opportunities and courses for obstetric and neonatal physicians and nurses, which include courses in Fetal Monitoring, Neonatal Stabilization, Hemorrhage and Hypertension Management. The Grainger Center for Simulation and Innovation offers additional multidisciplinary and collaborative education.
- MFM physicians, Neonatology and the Perinatal Center Coordinator regularly attend the hospital's case review meetings to provide a variety of educational opportunities. These 42 meetings include education and discussion of evidence-based research.
- Supports Illinois Perinatal Quality Collaborative (ILPQC) by assisting with conference planning, communication to referring hospitals and overall support from the Perinatal Center Coordinator. These initiatives are rolled out through the perinatal regionalized program.
- Monitors and collects data for the Illinois Department of Public Health (IDPH) for perinatal indicators of quality care, such as fetal, neonatal and maternal mortality rates; caesarian section rates; delivery volumes; low birth rates; and maternal and neonatal transport volumes.

In addition, the Perinatal Center collects and submits state-required reports of metabolic newborn screens, newborn hearing screens, HIV and adverse outcomes via the Adverse Pregnancy Outcomes Reporting System.

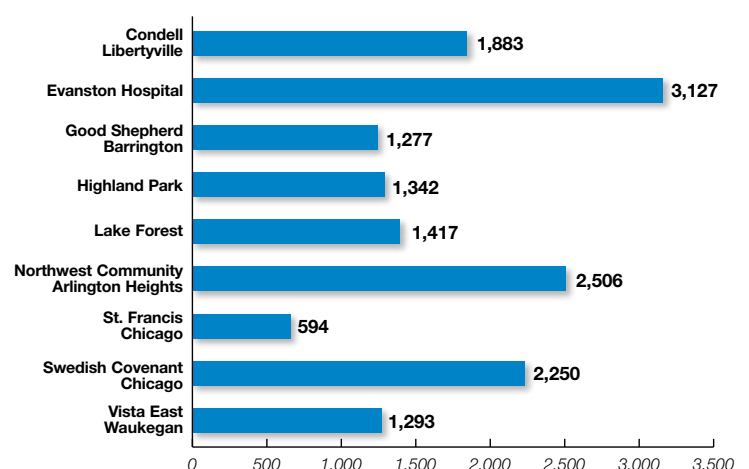
- Provides essential support for IDPH triennial site visits. Each hospital's resources and services are reviewed by the Perinatal Center and IDPH to maintain the level of care designation as determined by the Perinatal 640 Rule.

Maternal and Neonatal Transport to Evanston Hospital

Fiscal Year Oct. 1, 2016, to Sept. 30, 2017



Delivery Volume by Hospital Within the Perinatal Network



Jo Kim, PhD

Program Director and Clinical Assistant Professor

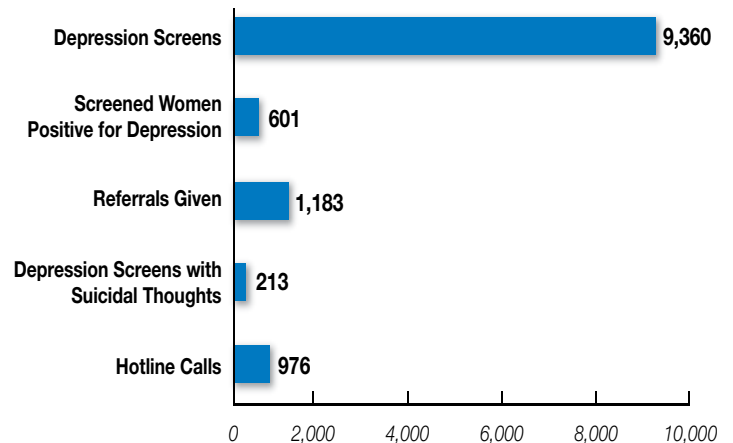
A Critical Lifeline for Perinatal Depression

Women are at greatly increased risk for clinical depression and its potentially devastating outcomes during the perinatal period. The Perinatal Depression Program (PDP) provides proactive universal screening for depression in both the pre- and postnatal periods using the Edinburgh Postnatal Depression Scale (EPDS). The program also provides an immediate, live telephone response to at-risk women by a trained and licensed professional 24/7/365 for information, advice or referral to an appropriate mental health provider.

2017 Highlights

- 9,360 depression and anxiety screens were administered.
- 601 depression screens triggered a clinical response for indications of women at risk, and 213 (35 percent) of those endorsed thoughts of self-harm.
- 976 calls to the MOMS Perinatal Depression Hotline.
- 31 callers were referred for emergency services based on acuity.
- The PDP team and Department colleagues had many scientific achievements in 2017:
 - Mobile Phone-Based Perinatal Depression Screening: Feasibility and Acceptance (Silver et al) was presented at the Annual Clinical and Scientific Meeting of the American Congress of Obstetricians and Gynecologists.
 - Text-Based Intervention for Perinatal Depression Screening: Feasibility and Acceptance (La Porte et al) was presented at the Postpartum Support International Annual Conference.
 - Explorations of Maternal Mood: Uncovering Biological, Genetic and Transcriptomic Factors Associated with the Onset of Perinatal Depression (Kim et al) was presented at the Perinatal Mental Health Conference.
- Research collaborations continued with Pablo Gejman, MD, and Alan Sanders, MD, (NorthShore; Psychiatric Genetics); Robert Gibbons, PhD, (University of Chicago) and Brian Danaher, PhD, (University of Oregon).

Depression and Anxiety Screening Volume Annually



- Program Director Jo Kim, PhD, was invited to serve as an inaugural member of the Illinois Maternal Mortality Special Review Committee for violent deaths. She was also invited to serve as a consultant to the Centers for Disease Control and Prevention on maternal mortality and perinatal suicide, a federal grant reviewer for the Substance Abuse and Mental Health Services Administration's (SAMHSA's) Pregnant and Postpartum Women mechanisms, and a subject matter expert on Postpartum Support International's certification exam development committee.
- For the seventh year, the Illinois Department of Human Services (DHS) provided additional funding to NorthShore's 24/7 Perinatal Depression Hotline (1-866-364-MOMS) which enables the hotline to provide immediate clinical support to women and families throughout Illinois.
- The Satter Foundation continued its generous three-year funding grant to support mobile health initiatives related to perinatal mood disorders for both detection and treatment.

Model Program Benefits Families

The Perinatal Family Support Center (PFSC) provides a wide array of clinical services for patients and their families receiving obstetrical and pediatric care at NorthShore.

2017 Highlights

- 1,498 families received services from PFSC in fiscal year 2017.
- Two five-week sessions of the Teen Education program (The ABCs of Pregnancy and Parenting) provided anticipatory guidance and developmentally appropriate education to pregnant teens and their support person with an ongoing goal of fostering healthy outcomes. Twelve of the 46 pregnant teens referred to PFSC elected to participate in this free program.
- 93 antenatal consults with Neonatology were performed in anticipation of support, guidance and resource needs of obstetric patients whose unborn child was diagnosed with a significant fetal anomaly.
- 454 families or patients were provided with needs-based support with the assistance of the NorthShore Associate Board Emergency Family Fund.
- The Auxiliary of NorthShore collected and donated several thousand disposable diapers and hundreds of diaper wipes to PFSC staff for distribution to under-resourced families during their December Diaper Drive.

- For the ninth consecutive year, PFSC partnered with the Junior League of Evanston-North Shore enabling an education and advocacy “Baby Shower” for 15 low-income pregnant women and their guests in April. In addition to a delicious meal and educational talks by various presenters, patients received new items useful in caring for their baby.
- PFSC received a Small Project Funding grant from The Auxiliary of NorthShore to purchase cookbooks for low-resourced patients who have diabetes. The aim is to assist patients in shopping for and preparing meals that will support a healthy lifestyle.
- PFSC implements a special discharge plan for families assessed to be at high risk with the goal of fostering safe transition to the community for infants and children. This planning promotes stable transition to parenting as well as appropriate medical follow-up for their children. Most families who participate demonstrate excellent outcomes.

Top four reasons for initial referral to the Perinatal Family Support Center

Reason	Percentage
Mental health issues	36.7%
High-risk pregnancy	11.7%
Pregnancy losses	10.0%
Infant Special Care Unit (ISCU) admissions	7.4%

To maintain and improve professional competency and excellent patient care, PFSC staff attended trainings in the following areas:

- Mindfulness Techniques to Reduce Stress, Anxiety and Depression in the Perinatal Period
- Illinois Safe Haven Law
- Psychiatric Illness and Ethical Considerations in Antepartum, Intrapartum and Postpartum Care
- Human Trafficking/Child Sexual Exploitation
- Fetal Alcohol Syndrome
- High-Risk Pregnancies: Fetal Anomalies, Maternal Health Complications, Multiple Gestation
- Treatment of Infertility and Implications for Pregnancy
- Maternal and Fetal Implications with Opiate Use/Abuse During Pregnancy
- Intimate Partner Violence

Additionally, PFSC had representation at the annual conference of the National Association of Perinatal Social Workers in Portland, OR: “Bridge to Innovative Perinatal Social Work Practice.”

The Joshua Stuart Krinsky Memorial Golf Outing celebrated its 17th annual event on August 11, 2017, at White Deer Run Golf Club in Vernon Hills to raise funds for NorthShore’s Perinatal Family Support Center. Harold Krinsky, DDS, founded the event after his son, Joshua, was born prematurely and spent seven months at Evanston Hospital before passing away. Dr. Krinsky credits the compassion and guidance of the staff for helping his family during this challenging time.



Perinatal Family Support Specialist Christen Scozzafave (left) and Janet Winslow, Supervisor, Perinatal Family Support Center, show off new signs from NorthShore’s Purple Butterfly Program.

Lifting Up During Loss

The loss of a baby is an incredibly traumatic event. But the loss of a baby when others in a multiple pregnancy survive is its own kind of complex and bittersweet challenge.

The Purple Butterfly Program was launched in January 2017 to bring awareness and increase sensitivity for inpatient families facing this emotional challenge. NorthShore’s Perinatal Family Support Center has adopted the program, which was started by a British foundation.

Perinatal Family Support Specialist Christen Scozzafave, LCSW, was already aware of the program when a patient came to her after losing one of her babies. “This mother wanted her child’s death acknowledged,” said Scozzafave. “We know from working with many families how these parents can feel awkward and at a loss, and of course we want to do everything we can to help.”

A small card with a purple butterfly is affixed to the isolette of the surviving infant, and larger cards can be placed outside the door of a patient room to ensure awareness of the loss. There has also been enhanced training for staff to help understand how best to talk with families in this situation.

“This is part of our ongoing commitment to sensitively care for families facing unique and sensitive situations,” said Perinatal Support Center Supervisor Janet Winslow.

Compassionate Treatment Helps Family Thrive

Pregnant with identical twins, Amy Mason suffered a tragic and traumatic loss at 18 weeks when an ultrasound revealed one of the babies no longer had a heartbeat, due to twin-to-twin transfusion syndrome. Not only was she consumed with grief, she learned that the baby who survived could be at risk for neurological and other complications.

"I was in shock and didn't want to take any chances," said Mason who quickly decided to switch her care to NorthShore's highly experienced Maternal-Fetal Medicine (MFM) team dedicated to high-risk pregnancies. She had frequent appointments and regular ultrasounds—and while it was a nerve-wracking process, Mason's anxiety lessened a bit as the weeks passed and her surviving daughter seemed to be doing well.

Mason and her husband drew comfort from the comprehensive care she received, but it was the compassion and personal attention from clinicians like midwife Gina Russano, CNM-APN, and the Perinatal Family Support Center that made a real difference. "Meeting with Gina was a very, very positive experience," said Mason. "I never felt rushed with her. I was struggling with many things emotionally and she was genuine and caring."

Russano is an essential member of the MFM team, helping patients through their treatment plan and connecting them to the Perinatal Family Support Center. "In some ways, I'm the bridge between the high-tech and the high-touch services we offer," said Russano. "There's something special and unique about being able to help steward somebody through such a challenging situation, to partner with them so they're not alone in their journey."

Perinatal Family Support Specialist Christen Scozzafave also played an important role in helping the Masons both deal with their grief and anticipate the delivery of "Baby A" and her surviving sister. Scozzafave brought the Purple Butterfly Program, designed to bring awareness and increase sensitivity for families facing the challenge of losing one baby in a multiple pregnancy, to NorthShore this year. The Masons were the first Purple Butterfly family at Evanston Hospital. "Amy was so open and embraced the idea," said Scozzafave. "I really admire how attuned she was to her feelings about the pregnancy and her



Michael and Amy Mason with their daughters Hope and Blake. The Masons are grateful for the emotional support and clinical care they received during a difficult pregnancy and the loss of Blake's twin.

babies, and how loving she was to herself and her entire family, including the deceased baby, as she made decisions."

Though she came three weeks early, Blake Mason was born May 19, 2017, and was able to go home the next day, joining her sister Hope, who turned 2 in December. Delivered by Scott MacGregor, DO, who leads the MFM team, the birth was "calm and peaceful and exactly what we needed," said Mason. "Both my husband and I have a very strong faith, and we were able to say goodbye in a peaceful way." Hope is a great big sister, and Blake is a happy, easy baby who rarely fusses, said Mason.

"One of the nice things about our group is that we're multi-disciplinary and patients have access to everything including ultrasounds, genetic testing, neonatal consults and the Perinatal Family Support team," said Dr. MacGregor. "I think our patients feel really well cared for, and they're surrounded by people who do care."

MEDICAL EDUCATION Undergraduate

H. Jacob Saleh, MD
Site Director and Clinical Associate Professor

Michael Hughey, MD
Associate Site Director and Senior Clinician Educator
Undergraduate Medical Education

In collaboration with the University of Chicago Pritzker School of Medicine, NorthShore faculty continues its commitment to ongoing excellence in undergraduate medical education.

With the clerkship centered at Evanston Hospital, students complete clinical learning objectives in healthcare for women in an atmosphere of discovery and clinical excellence.

In addition to the core third-year rotation, fourth-year students are offered unique month-long electives in general and high-risk obstetrics. Electives include subspecialty experience in urogynecology, gynecologic oncology, fertility and pelvic pain.

This year marked the highest number of senior students with a strong interest in postgraduate training from medical schools across the United States matriculating at NorthShore.

2017 Highlights

- Our Objective Structured Clinical Examination (OSCE) continues to improve and evolve coordinated by Michael Hughey, MD, Associate Site Director for Undergraduate Medical Education. He has continued to develop simulation training programs and leads the faculty in administering the OSCE.

New training modules have been deployed both in the Grainger Center for Simulation and Innovation and online to enhance student learning opportunities. The students generally praise this unique activity as both an effective evaluation tool and a learning



Dr. Jacob Saleh helps lead NorthShore's commitment to excellence in undergraduate medical education. Shown here with an advanced full-body birthing simulator.

platform—an opportunity to demonstrate (instead of recall) what they have learned.

- Standardized patients were included in the year-three curriculum for the first time in 2016–2017. This interactive learning opportunity uses live patient-actors for clinical learning. The authentic simulation, as well as the immediate feedback with standardized patients, has been very well received by the students.

Expanding this opportunity to advanced simulation labs and the OSCE exam is an ongoing goal for the coming years.

- Continuous improvement and involvement are guiding principles in the success of the NorthShore rotation with the goal of optimizing the learner clinical experience and meeting all educational objectives. In response to student feedback, data collected over the past academic year has concentrated efforts in the areas of faculty development, mentor program expansion and didactic lecture schedule improvements.

Incorporating case-based learning in the didactic schedule was a noteworthy improvement and was informed by student feedback. The program has benefited from dedicated lecturers, mentors and OSCE exam faculty who generously volunteer their time and expertise.

- Drs. Michael Hughey, H. Jacob Saleh, and Sabrina Holmquist, MD, MPH, University of Chicago Obstetrics and Gynecology Clerkship Director, continue their involvement in the Association of Professors of Gynecology and Obstetrics/Council on Resident Education in Obstetrics and Gynecology (APGO/CREOG). Ongoing projects for presentation include the use of synthetic materials to simulate human tissue elasticity during simulated operative vaginal deliveries.



Dr. Linda Hughey Holt and Dr. Michael Hughey were recipients of the Holden K. Farrar, Jr. MD, Teacher of the Year Award and Lecturer of the Year Award, respectively. This marks the first occasion that the two awards are granted to one family.

MEDICAL EDUCATION Graduate

Sangeeta Senapati, MD, MS
Site Director and Clinical Associate Professor

Barrett Robinson, MD, MPH
Associate Site Director and Clinical Assistant Professor

All 28 of the University of Chicago Pritzker School of Medicine OB/GYN residents benefit from learning opportunities at NorthShore over their four-year training program.

Under the prior leadership of Anita Blanchard, MD, and now Adriane Dade, MD, Obstetrics and Gynecology Residency Director at the University of Chicago Pritzker School of Medicine, NorthShore and Pritzker provide the breadth and depth of graduate medical education at both campuses.

NorthShore also hosts residents from Saint Francis Hospital's Obstetrics and Gynecology residency training program, which allows for one resident to be part of our Labor and Delivery team throughout the academic year.

New this year, residents from Presence Resurrection Medical Center are also joining our Labor and Delivery team. The University of Chicago residents' obstetrics and gynecology outpatient clinic training is based at the NorthShore Community Health Center. This experience gives residents the opportunity to learn outpatient management within the context of a "group practice."

2017 Highlights

- Members of our OB/GYN faculty are routinely recognized for their remarkable teaching abilities. NorthShore physician David Ouyang, MD, was recognized by the Obstetrics and Gynecology residents for his talent and dedication to graduate medical education as the recipient of the Golden Apple Award.
- The residents received several important accolades this year for their teaching of medical students. Golden Apple Awards were presented to John Byrne, MD (Class of 2017), Robert Scholz, MD (Class of 2018), Taylor Stanton, MD (Class of 2019), and Caroline Kuhn, MD (Class of 2020).
- The resident research projects are representative of the extensive scope of research at both NorthShore and the University of Chicago and the combined faculty commitment to mentor learners in their academic endeavors. Our residents published and presented their research work at numerous national meetings:
 - **Caroline Kuhn, MD**, has been working on determining the relationship between fMRI events resembling sustained uterine contractions and spontaneous menstrual cramping, under the direction of Kevin Hellman, PhD**. This work was presented at the International Pelvic Pain Society annual meeting and received the first prize award at the Annual Chicago Gynecological Society Meeting.
 - **Xiaojie Diana Zhou, MD**, (under the guidance of Eve Feinberg, MD) presented her work at the American Society for Reproductive Medicine on racial disparities and oocyte donation. This work won the third prize award at the Annual Chicago Gynecological Society Meeting.
 - **Dana Elborno, MD**, under the guidance of Kimberly Kenton, MD, published her work entitled "Postoperative appointments: Which ones count?" in the *International Urogynecology Journal*.
 - **Richard Cockrum, MD**, and **Shelly Tien, MD**,** published a fetal heart rate tracing "Strip of the Month" in *NeoReviews*.
 - **Michelle Winter, MD**, working with Mary Stephenson, MD, published her work on luteal phase starts of vaginal progestin for women with recurrent pregnancy loss in *Fertility and Sterility*.
 - **John Byrne, MD**, published his work on ethics in OB/GYN education in *Medical Science Educator*. He also presented his study (working alongside Maryam Siddiqui, MD*, Barrett Robinson, MD**, and Beth Plunkett, MD**) on counseling patients at risk for periviable delivery at the ACOG annual meeting.
 - **Yatunde Fatunde, MD**, worked with Ann Borders, MD**, to examine the role of a breastfeeding peer counselor, which was presented at the SMFM annual meeting.
 - **Julia Fehniger, MD**, published her work on MRI detection of peritoneal carcinomatosis in suspected gynecologic malignancies, under the guidance of Ernst Lengyel, MD*, PhD, and Diane Yamada, MD*.
 - **Melissa Preys, MD**, worked with Emmet Hirsch, MD**, on a project titled Comparing Outcomes of Elective Induction of Labor, Medically Indicated Induction of Labor and Expectant Management: A Retrospective Study of Prospective Intent, which was presented at the Central Association of Obstetricians and Gynecologists annual meeting. She also presented her work with Maryam Siddiqui, MD*, on depression and social support during antepartum hospitalization at the ACOG annual meeting.
 - **Anne Schufreider, MD**, presented her work with Eve Feinberg, MD, on preimplantation genetic screening with frozen and fresh embryo transfers at the American Society for Reproductive Medicine.
- **Ian Grable, MD, MPH**, Clinical Associate Professor in Maternal-Fetal Medicine, and his colleagues continued to provide cutting-edge educational opportunities for the residents through his use of simulation technology in the state-of-the-art Grainger Center for Simulation and Innovation (GCSI) at NorthShore. His educational program provided intensive training for the residents in areas such as complex deliveries, ultrasound skills, team building, obstetric emergencies, patient counseling and management of medically complex situations. Similarly, Sangeeta Senapati, MD, MS, and colleagues provided the residents with high-impact gynecologic training at the GCSI with a focus on advanced minimally invasive surgical skills and techniques using a range of both low- and high-fidelity models in the safety of the simulated learning environment.

* University of Chicago Pritzker School of Medicine faculty

** NorthShore University HealthSystem faculty

Division of Female Pelvic Medicine and Reconstructive Surgery Fellowship

Adam Gafni-Kane, MD
Program Director and Clinical Assistant Professor
Female Pelvic Medicine and Reconstructive Surgery

The Division of Female Pelvic Medicine and Reconstructive Surgery (FPMRS) supports advanced training for three fellowship positions certified by the Accreditation Council for Graduate Medical Education (ACGME). The highly regarded national reputation of the NorthShore FPMRS fellowship program was instrumental in matching top-tier applicants for the sixteenth consecutive year.

The program includes training in pelvic surgery, urinary incontinence, pelvic organ prolapse and pelvic health conditions with integrated clinical rotations at the University of Chicago.

2017 Highlights

- Our recently graduated fellow, **Shilpa Iyer, MD**, accepted a faculty position at the University of Chicago where she joins an FPMRS division that includes former NorthShore fellow Juraj Letko, MD. Dr. Iyer had an exceptional academic year highlighted by the publication of original research comparing outcomes for women undergoing bladder instillations for bladder pain syndrome. She first-authored a randomized-controlled trial focused on the utility of dermal allografts in reducing the risk for prolapse recurrence, which has been accepted for publication.
- **Carolyn Botros, DO**, our third-year fellow, published a study comparing postoperative pain in patients undergoing two forms of sacrospinous vaginal vault suspension for prolapse, as well as a description and accompanying video of a technique used to address vaginal pouch prolapse in a woman with Mayer-Rokitansky-Küster-Hauser syndrome. She is on track to complete her fellowship thesis comparing the efficacy of trimethoprim and methenamine hippurate as a prophylaxis against recurrent urinary tract infections.
- **Svjetlana Lozo, MD**, our second-year fellow, was accepted to the NorthShore Quality and Patient Safety Fellowship, within which she plans to investigate antibiotic stewardship and confirmation of penicillin allergies in preoperative Urogynecology patients. She is heading a meta-analysis investigating varying doses, injection sites and number of OnabotulinumtoxinA injections for the treatment of refractory detrusor overactivity.
- **Ghazeleh Rostami, MD**, our first-year fellow, arrived from her research fellowship at the University of Oklahoma Health Sciences Center. She is applying her expertise in three-dimensional pelvic ultrasound to the study of defecatory disorders.

Division of Gynecologic Oncology Fellowship

Jean Hurteau, MD
Associate Program Director and Clinical Professor
Gynecologic Oncology

The Division of Gynecologic Oncology partners in an approved, integrated fellowship training program with the University of Chicago. The fellowship was accredited by the American Board of Obstetrics and Gynecology, and this year, the program was successful in transitioning this accreditation to ACGME which will now oversee all fellowship programs. The program consists of one basic science research year and two clinical years divided between the NorthShore and University of Chicago campuses. The clinical experience includes management of preinvasive and complex invasive cancers of the gynecological tract under the supervision of 10 attending physicians, with both surgical and medical oncology as central components of the curriculum.

2017 Highlights

- **Josephine Kim, MD**, graduated from our fellowship this year and joined the Division of Gynecologic Oncology at the University of Chicago Pritzker School of Medicine. Dr. Kim earned her medical degree at the University of Chicago and completed her residency training at the University of California-San Diego.
- **Jerlinda Ross, MD**, is now entering her second of two clinical years of fellowship after completing a research year focusing on healthcare disparities in gynecologic oncology. Dr. Ross completed residency training at Indiana University School of Medicine and earned her medical degree from Duke University. She was invited to present her abstract on “Endometrial cancer survivors’ access to recommended self-care resources to target obesity in a high poverty urban community” at the Society of Gynecologic Oncology 2017 Annual Meeting on Women’s Cancer.
- **Claire Hoppenot, MD**, is now entering the first of two clinical years of fellowship after completing a medical ethics fellowship through the MacLean Center. Dr. Hoppenot also joined Ernst Lengyel, MD, PhD, Professor of Obstetrics and Gynecology, in his ovarian cancer research laboratory for her first year of research. Dr. Hoppenot earned her medical degree at Thomas Jefferson University in Philadelphia and completed her residency training at Northwestern University.
- **Isabel Lazo, MD**, is our first-year fellow and is currently in her research year. Dr. Lazo joined Dr. Lengyel’s laboratory and is involved in research on ovarian cancer metastasis. Dr. Lazo completed a fellowship in hospice and palliative care medicine at University of California, Davis prior to her recruitment to our fellowship. Dr. Lazo earned her medical degree at the University of Illinois, Chicago and completed her residency training at the Kaiser Permanente Northern California residency program in Oakland, California.
- **Raanan Alter, MD**, just matched to our fellowship program and is our incoming fellow for next year. Dr. Alter is completing his residency at Loyola University Medical Center in Maywood, Illinois. He completed his medical degree at Northwestern University.

NorthShore and University of Chicago Maternal-Fetal Medicine Fellowship

David Ouyang, MD
Program Director and Clinical Associate Professor
Maternal-Fetal Medicine

The integrated NorthShore and University of Chicago Maternal-Fetal Medicine (MFM) fellowship has fully developed the training experience in the care of women with high-risk pregnancies for all three of its fellows. During the three-year program, the fellows benefit from dividing their time and activities equally at NorthShore and the University of Chicago under the supervision and mentorship of 16 board-certified faculty members. They spend two years in clinical rotations where they refine their ability to manage complex pregnancies and develop proficiency and expertise in ultrasound and antenatal diagnosis, including procedural skills such as amniocentesis and chorionic villus sampling. Additionally, the fellows devote at least one year to clinical and/or basic science research activity with faculty mentorship.

2017 Highlights

- **Amanda Stephens, MD**, successfully defended her thesis entitled "Risk Factor Based Perinatal Drug Testing in a Suburban Tertiary Care Center" under the mentorship of David Ouyang, MD, of the NorthShore MFM Division. Dr. Stephens also completed her Master of Science in public health sciences for clinical professionals at the University of Chicago concurrently with her MFM fellowship. Dr. Stephens returned to her home state to join the MFM faculty at the University of Missouri in an academic practice.
- **Patrick Schneider, MD**, is our third-year fellow and remains actively engaged in quality improvement work. Under the guidance of Ann Borders, MD, MSc, MPH, acting as his thesis mentor, he has been working to identify system errors and execute potential systems solutions to reduce severe maternal morbidity in women with severe range hypertension. His research has been presented at multiple national meetings, and he has also taken a leadership role locally in implementing these systems at NorthShore.
- **Lena Braginsky, MD**, is our second-year fellow and has taken on the challenging task of conducting a randomized controlled trial comparing the use of tissue adhesive versus butterfly closures for cesarean incisions to potentially reduce infection and wound disruption. She has already recruited more than 400 patients into her study in just over one year. Her mentor is Beth Plunkett, MD, MPH, of the NorthShore MFM Division.
- **Javier Rodriguez Kovacs, MD**, is our first-year fellow and joined us following completion of his residency at Wayne State University. He will be working with Sarosh Rana, MD, section chief of MFM at University of Chicago, on his thesis entitled "Long-Term Cardiac Effects of Hypertension During Pregnancy."
- As a sign of the growth of the fellowship, the ACGME granted our program expansion to train four fellows for at least the next three years. We were able to successfully match two outstanding candidates for the coming fellowship year: Samantha de los Reyes from Johns Hopkins Medical School and Caitlyn MacGregor from Brown University.

RESEARCH Clinical Studies 2017

Patients Benefit from a Broad Array of Clinical Trials

DIVISION OF GYNECOLOGIC ONCOLOGY

Investigator	Clinical Trial	Sponsor
Hurteau	GOG 0210: A Molecular Staging Study of Endometrial Carcinoma	NorthShore
Hurteau	GOG-0238: A Randomized Trial of Pelvic Irradiation With or Without Concurrent Weekly Cisplatin in Patients With Pelvic-Only Recurrence of Carcinoma of the Uterine Corpus	NorthShore
Hurteau	GOG-0252: A Phase III Clinical Trial of Bevacizumab IV vs. IP Chemotherapy in Ovarian, Fallopian Tube and Primary Peritoneal Carcinoma NCI-Supplied Agent(s): Bevacizumab	NorthShore
Hurteau	GOG 0258: A Randomized Phase III Trial of Cisplatin and Tumor Volume Directed Irradiation Followed by Carboplatin and Paclitaxel vs. Carboplatin and Paclitaxel for Optimally Debulked, Advanced Endometrial Carcinoma	NorthShore
Hurteau	GOG-0264: A Randomized Phase II Trial of Paclitaxel and Carboplatin vs. Bleomycin, Etoposide and Cisplatin for Newly Diagnosed Advanced Stage and Recurrent Chemo-naïve Sex-Cord Stromal Tumors	NRG Oncology

Investigator	Clinical Trial	Sponsor
Hurteau	GOG-0267: Quality of Life and Care Needs in Patients with Persistent or Recurrent Platinum-Resistant Ovarian, Fallopian Tube and Peritoneal Cancer	GOG
Hurteau	GOG0281: A Randomized Phase II/III Study to Assess the Efficacy of Trametinib (GSK 1120212) in Patients with Recurrent or Progressive Low-Grade Serous Ovarian or Peritoneal Cancer	NRG Oncology
Hurteau	GOG 0286B: A Randomized Phase II/III Study of Palitaxel/Carboplatin/Metformin (NSC#91485) vs. Paclitaxel/Carboplatin/Placebo as Initial Therapy for Measurable Stage III or IVB, or Recurrent Endometrial Cancer	NRG Oncology
Hurteau	GOG3005/AbbVie M13-694: A Phase III Placebo-Controlled Study of Carboplatin/Paclitaxel With or Without Concurrent and Continuation Maintenance Veliparib (PARP Inhibitor) in Subjects With Previously Untreated Stages II or IV High-Grade Serous Epithelial Ovarian, Fallopian Tube or Primary Peritoneal Cancer	NRG Oncology/AbbVie

continued

DIVISION OF GYNECOLOGIC ONCOLOGY *continued*

Investigator	Clinical Trial	Sponsor
Hurteau	Prophylactic Salpingectomy with Delayed Oophorectomy, Risk-Reducing Salpingo-Oophorectomy and Ovarian Cancer Screening Among BRCA Mutation Carriers: A Proof of Concept Study 2103-0340	MD Anderson
Hurteau	UC10-283; NCI 8348: A Phase I/II Study of Cediranib and Olaparib in Combination for Treatment of Recurrent Platinum-Sensitive Papillary-Serous Ovarian, Fallopian Tube, or Peritoneal Cancer or for Treatment of Recurrent Triple-Negative Breast Cancer	University of Chicago/ Dana-Farber Cancer Institute/NIH/ NCI
Hurteau	UC13-1323: A Phase 2 Study of XL184 (Cabozantinib) in Recurrent Metastatic Endometrial Cancer	University of Chicago/ Dana-Farber Cancer Institute/NCI
Kim	Immortalization of Human Fallopian Tube Epithelial Cells Using Conditional Reprogramming	NorthShore
Kirschner	What Is the Utility of CT Scan in the Perioperative Evaluation of Patients Undergoing Robotic Hysterectomy for Endometrial Cancer?	NorthShore
Moore	Evaluation of Clinical Outcomes in Ovarian Cancer Patients Undergoing Variable Numbers of Postoperative Chemotherapy Cycles Following Neoadjuvant Chemotherapy and Interval Cytoreductive Surgery	NorthShore
Moore	A Pilot Study of Patient Goals in the Management of Malignant Bowel Obstruction in Recurrent Cancer	NorthShore Breast and Ovarian Research Program: Concept/Pilot Award
Moore	Pilot Study of the Impact of Early Palliative Care on Quality of Life in Recurrent Ovarian, Fallopian Tube and Primary Peritoneal Cancer	
Moore	The Impact that Duration of Time on Chemotherapy Has on Survival in Recurrent Ovarian Cancer	NorthShore
Moore	Venous Thrombosis in Patients Receiving Extended Pharmacologic Prophylaxis Following Minimally Invasive Surgery for Endometrial Cancer	NorthShore
Rodriguez	A Phase III, Randomised, Double-Blind, Placebo-Controlled, Multicentre Study of Olaparib Maintenance Monotherapy in BRCA Mutated Relapsed Ovarian Cancer Patients Who Are in Complete or Partial Response Following Platinum-Based Chemotherapy, D0816C00002	AstraZeneca
Rodriguez	Development of a Progestin-Based Pharmacologic Approach for the Effective Prevention of Ovarian Cancer	The Auxiliary of NorthShore University HealthSystem
Rodriguez	Efficacy of Carboplatin and Weekly Paclitaxel for the Treatment of Carcinosarcoma	NorthShore
Rodriguez	Endoscopic and Karyometric Assessment of Fallopian Tube Health for Ovarian Cancer Prevention	The University of Arizona/DOD
Rodriguez	Evaluation of Metformin and Simvastatin Therapy for Endometrial Cancer Using a Xenograft Mouse Model	NorthShore
Rodriguez	GOG-0214: Phase II Double-Blind Randomized Trial Evaluating the Biologic Effect of Levonorgestrel on the Ovarian Epithelium in Women at High Risk for Ovarian Cancer	NorthShore
Rodriguez	GOG-218: A Phase III Trial of Carboplatin and Paclitaxel Plus Placebo vs. Carboplatin and Paclitaxel Plus Concurrent Bevacizumab (NSC #704865, IND #7921) Followed by Placebo, vs. Carboplatin and Paclitaxel Plus Concurrent and Extended Bevacizumab, in Women with Newly Diagnosed, Previously Untreated, Stage III or IV Epithelial Ovarian, Primary Peritoneal Cancer	NorthShore

DIVISION OF GYNECOLOGIC ONCOLOGY *continued*

Investigator	Clinical Trial	Sponsor
Rodriguez	Investigation of Progesterone-Mediated Mechanisms of Cancer Prevention in the Fallopian Tube: Comparison of Fallopian Tubes from Postpartum vs. Non-Gravid Women	NorthShore
Rodriguez	NCI 9671: Exceptional Responders Pilot Study: Molecular Profiling of Tumors from Cancer Patients Who Are Exceptional Responders	National Cancer Institute (NCI)
Rodriguez	Outpatient Platinum Desensitization Protocol for the Treatment of Gynecologic Malignancies	NorthShore
Rodriguez	Preoperative Prediction of Metastasis, Recurrence and Resistance in Endometrial Cancer Biopsies	
Rodriguez	Proteomic and Molecular Profiles Associated with Endometrial Carcinogenesis (contract under EH12-150)	The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc.
Rodriguez	Proteomic Profiling of Primary and Metastatic Ovarian and Endometrial Cancers (contract under EH12-150)	
Rodriguez	Proteomic Profiling of Primary and Recurrent Ovarian and Endometrial Cancers	
Rodriguez	Proteomic Profiling of Racial Disparities in Endometrial Cancer (contract under EH12-150)	
Rodriguez	Suppression of Vitamin D-Induced CYP24 by Progestin	Bears Care
Rodriguez	UC13-1235: A Randomized Placebo-Controlled Phase II Trial of Metformin in Conjunction with Chemotherapy Followed by Metformin Maintenance Therapy in Advanced Stage Ovarian, Fallopian Tube and Primary Peritoneal Cancer	University of Chicago

DIVISION OF GYNECOLOGICAL PAIN AND MINIMALLY INVASIVE SURGERY

Hellman	Novel Approaches to Investigation of Menstrual Pain	NorthShore
Hellman	Noninvasive Imaging of Uterine Physiology to Improve Treatment for Dysmenorrhea	NICHHD
Hellman	Neurophysiological Diagnostics for Menstrual Pain (R21)	NIH
Senapati	Registry for Gynecological Patients	NorthShore
Tu	Deciphering the Hormonal and Nociceptive Mechanisms Underlying Bladder Pain (1R01DK100368-01)	NIH
Tu	Interstitial Cystitis: Examination of the Central Autonomic Network (R01)	Medical College of Wisconsin/ NIH
Tu	Recruitment Registry for the Tu/Hellman Research Lab	NorthShore

DIVISION OF MATERNAL-FETAL MEDICINE

Borders	Social Conditions in Pregnancy and Fetal Development	Northwestern University
Borders	Understanding Socioeconomic Disparities in Perinatal Risk: The Role of Epigenetic and Transcriptional Regulation in the Placenta	Northwestern University/NIH on Minority Health and Health Disparities
Dinsmoor	A Randomized Trial to Prevent Congenital Cytomegalovirus (CMV) Infection	Northwestern University/NIH
Dinsmoor	Prevalence of CMV Infection in Placentas of Small for Gestational Age (SGA) Neonates	NorthShore
Grable	High-Fidelity Ultrasound Simulation and Improvement in Learners' Performance	NorthShore
Ouyang	Complications Associated with High Dose Misoprostol Second Trimester Induction Termination	NorthShore
Ouyang	Evaluation of Perinatal Drug Screening at NorthShore	NorthShore

DIVISION OF MATERNAL-FETAL MEDICINE *continued*

Investigator	Clinical Trial	Sponsor
Ouyang	Optimizing Outcomes in Multifetal Gestations: Does Identification of Asymptomatic Cervical Dilation Improve Outcomes Compared to Those Presenting with Symptomatic Preterm Labor?	NorthShore
Ouyang	Prevalence of CMV Infection in Neonates with Echogenic Bowel	NorthShore
Plunkett	A Randomized Trial of 17 Alpha-Hydroxyprogesterone Caproate for Prevention of Preterm Birth in Nulliparous Women with a Short Cervix	Northwestern University/NIH/ National Institute of Child Health and Human Development (NICHD)
Plunkett	A Randomized Trial of Pessary and Progesterone for Preterm Prevention in Twin Gestation with a Short Cervix (PROSPECT)	NICHD
Plunkett	A Randomized Trial of Pessary in Singleton Pregnancies with a Short Cervix (TOPS)	Northwestern University/NIH
Plunkett	An Observational Study of Hepatitis C Virus in Pregnancy	NorthShore
Plunkett	Dermabond Compared with Steri-Strips to Reduce Wound Complications in Pfannenstiel Incision Closure After Cesarean Delivery	NorthShore
Plunkett	Exploration of Barriers Facing Physicians in Diagnosing and Treating Obesity	NorthShore
Plunkett	Exploring the Role of Complementary and Integrative Healthcare Providers in the Diagnosis and Treatment of Obesity	NorthShore
Plunkett	Fetal Cardiovascular Overgrowth and Maternal Diabetes: A Long-Term Follow-Up Study	NorthShore
Plunkett	Gestational Weight Gain in Women With and Without Pregestational Diabetes	NorthShore
Plunkett	Induction in Nulliparous Women at 39 Weeks to Prevent Adverse Outcomes: A Randomized Controlled Trial. A Randomized Trial of Induction vs. Expectant Management (ARRIVE) (part of Maternal-Fetal Network)	National Institute of Child Health and Human Development (NICHD)
Plunkett	NICHD Maternal-Fetal Network (renewal of EH10-206)	NIH/NICHD/ Northwestern
Plunkett	Obesity Is Underdiagnosed and Undertreated Among Reproductive-Aged Women	NorthShore
Plunkett	Obstetric Research Registry	NorthShore
Plunkett	Outcomes of Vaginal and Cesarean Delivery in Twins Delivering at Less than 34 Weeks Gestation	NorthShore
Plunkett	The Association Between Antihypertensive Therapy and Peripartum Depression	NorthShore
Robinson	Are Women Who Have a Postpartum Hemorrhage with a Twin Delivery at Increased Risk of Postpartum Hemorrhage in a Subsequent Singleton Pregnancy?	NorthShore

DIVISION OF OBSTETRICS

Investigator	Clinical Trial	Sponsor
Hirsch	Autophagy in the Genesis and Prevention of Labor	March of Dimes
Hirsch	The Molecular Pathogenesis of Health Disparities in Infection Induced Preterm Birth (R01HD041689)	NIH
Hirsch	The Role of Membrane Progesterone Receptors in Primary Myometrial Cells	NorthShore/ March of Dimes

DIVISION OF UROGYNECOLOGY AND RECONSTRUCTIVE SURGERY

Botros	Methenamine Hippurate vs. Trimethoprim in the Prevention of Recurrent UTIs	NorthShore
Gafni-Kane	Bladder Capacity as an Objective Measure of Response to Intravesical Treatment of Newly Diagnosed Interstitial Cystitis: A Prospective, Randomized Trial	NorthShore
Gafni-Kane	Long-Term Outcomes of Uterosacral Ligament Suspension vs. Sacrospinous Ligament Suspension with Mesh	NorthShore
Goldberg	The Risk of Cognitive Impairment in Patients Starting Anticholinergic Medications to Treat Overactive Bladder: A Prospective Trial	NorthShore
Iyer	Curriculum Case-Based Prospective Study	NorthShore
Sand	A Double-Blind, Randomized, Controlled Trial Comparing the Safety and Efficacy of AMDC-USR with Placebo in Female Subjects with Stress Urinary Incontinence, Clinical Investigation Plan No. 13-003	Cook MyoSite Incorporated
Sand	A Prospective, Non-Randomized, Parallel Cohort, Multi-Center Study of Uphold LITE vs. Native Tissue for the Treatment of Women with Anterior/Apical Pelvic Organ Prolapse	Boston Scientific
Sand	Does the Effect Match the Symptoms: A Retrospective Cohort Study of Percutaneous Tibial Nerve Stimulation for Overactive Bladder	NorthShore
Sand	Functional Bladder Capacity as an Objective Measure of Response to Intravesical Treatment of Newly Diagnosed Interstitial Cystitis: A Prospective, Randomized Trial	NorthShore
Sand	Urinary Incontinence Symptoms and Correlation to Urodynamic Testing	NorthShore
Tomezsko	A Prospective, Non-Randomized, Parallel Cohort, Multi-Center Study of Xenform vs. Native Tissue for the Treatment of Women with Anterior/Apical Pelvic Organ Prolapse, Protocol U9920	Boston Scientific
Tomezsko	The Role of the Integration of Tissue Components in Pelvic Floor Tissue Biomechanics Associated with Pelvic Organ Prolapse	NorthShore

PERINATAL DEPRESSION PROGRAM

La Porte	Perinatal Depression Hotline Database	NorthShore
Silver	A Feasibility and Patient Acceptance Pilot Study of Computer Adaptive Technology Combined with Text Messaging for the Management of Perinatal Depression, Anxiety and Mania	NorthShore
Silver	Pilot Study of Computer Adaptive Technology for Perinatal Mood Disorder Screening During and After Pregnancy	NorthShore

Academic Publications Advance Knowledge and Enhance Future Care

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Miller, G, Culhane, J, Grobman, W, Simhan, H, Williamson, D, Adam, E, Buss, C, Entringer, S, Kim, KY, Garcia-Espana, F, **Keenan-Devlin, L**, McDade, T, Wadhwa, P, **Borders, A**. (2017) Mothers' childhood hardship forecasts adverse pregnancy outcomes: Role of inflammatory, lifestyle, and psychosocial pathways. *Brain, Behavior, and Immunity* Oct;65:11-19.

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Oladosu, FA, Tu, FF, Hellman, KM. (2017) Nonsteroidal anti-inflammatory drug resistance in dysmenorrhea: Epidemiology, causes, and treatment. *American Journal of Obstetrics and Gynecology* Sep 6. [Epub ahead of print]

Phelan, CM, Kuchenbaecker, KB, Tyrer, JP, Kar, SP, Lawrenson, K, Winham, SJ, **Rodriguez, GC**, et al. (2017) Identification of 12 new susceptibility loci for different histotypes of epithelial ovarian cancer. *Nature Genetics* May;49(5):680-691.

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Ross, J, Braswell, KV, Madeira da Silva, L, Strutsman, S, Finan, MA, Nicolson, W, Harmon, MD, Missanelli, M, Cohen, A, Singh, A, Scalici, JM, Rocconi, RP. (2017) Unraveling the etiology of ovarian cancer racial disparity in the Deep South: Is it nature or nurture? *Gynecologic Oncology* May;145(2):329-333.

Ross, KM, Miller, GE, Qadir, S, **Keenan-Devlin, L**, Leigh, AKK, **Borders, A**. (2017). Close relationship qualities and maternal peripheral inflammation during pregnancy. *Psychoneuroendocrinology* Mar;77:252-260.

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Shephard, SN, Lengmang, SJ, Anzaku, SA, Mamven, OV, **Kirschner, CV**. (2017) Effect of HIV infection on outcomes after surgical repair of genital fistula. *International Journal of Gynaecology and Obstetrics* Sep;138(3):293-298.

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Thaete, LG, Qu, XW, **Neerhof, MG**, **Hirsch, E**, Jilling, T. (2017) Fetal growth restriction induced by transient uterine ischemia-reperfusion: Differential responses in different mouse strains. *Reproductive Sciences* Jan 1. [Epub ahead of print]

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Tran, AM, **Sand, PK**, Seitz, MJ, **Gafni-Kane, A**, Zhou, Y, **Botros, SM**. (2017) Does physician specialty affect persistence to pharmacotherapy among patients with overactive bladder syndrome? *International Urogynecology Journal* Mar;28(3):409-415.

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for perineal pain. *BJOG: An International Journal of Obstetrics and Gynaecology* Jan;124(2):261.

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Tu, FF, Kane, JN, Hellman, KM. (2017) Noninvasive experimental bladder pain assessment in painful bladder syndrome. *BJOG: An International Journal of Obstetrics and Gynaecology* Jan;124(2):283-291.

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Yucer, N, Holzapfel, M, **Jenkins Vogel, T**, Lenaues, L, Ornelas, L, Laury, A, Sareen, D, Barrett, R, Karlan, BY, Svendsen, CN. (2017) Directed differentiation of human induced pluripotent stem cells into fallopian tube epithelium. *Scientific Reports* Sep 6;7(1):10741.

Zhou, X, McQueen, D, **Schufreider, A**, Uhler, ML, Feinberg, EC. (2016) Impact of race on oocyte donation. *Fertility and Sterility* Sep;106(3):e366-e367.

Zhou, X, McQueen, D, **Schufreider, A**, Uhler, ML, Feinberg, EC. (2016) Racial disparities: In vitro fertilization (IVF) outcomes in donor oocyte recipients. *Fertility and Sterility* Sep;106(3):e99.

SCHOLARSHIP Presentations and Abstracts 2017

Our Physicians Are Frequent Presenters at Key National and International Conferences

Agrawal, V, **Hira, S**, Jaiswal, MK, Beaman, KD, **Hirsch, E**. (2017) Surfactant protein A (SP-A) prevents delivery due to intrauterine infection with live *E. coli* even when administered in a delayed and systemic fashion. Society for Reproductive Investigation 64th Annual Scientific Meeting, Orlando, FL.

Alsaden, I, **Ross, J**, Liao, C, **Javellana, M**, **Laus, K**, Yamada, S, Lee, N. (2017) Effect of diabetes and metformin on uterine risk factors in type 2 endometrial cancers. Western Association of Gynecologic Oncologists (WAGO) Annual Meeting, Rancho Mirage, CA.

Alsaden, I, **Senapati, S**, **Tu, FF**. (2017) Posterior obliterated cul-de-sac model: A feasibility study. Basic Science, Research and Education

Video Session, American Association of Gynecologic Laparoscopic Surgeons 46th Global Congress on Minimally Invasive Gynecologic Surgery, National Harbor, MD.

As-Sanie, S, Carrillo, J, Hibner, M, Lamvu, G, **Senapati, S**, Villegas, J. (2017) Clinical cases on chronic pelvic pain: A panel discussion. American Association of Gynecologic Laparoscopists 13th Annual International Meeting, Cartagena, Colombia.

Atashroo, D. (2017) Chronic pelvic pain: Overview and pharmacotherapy. American Association of Gynecologic Laparoscopic Surgeons 2nd Workshop on Surgical Anatomy of the Pelvic and Procedures in Patients with Chronic Pelvic Pain, Phoenix, AZ.

Atashroo, D. (2017) Oral contraception and associated interactions. NorthShore University HealthSystem Internal Medicine Symposium, Evanston, IL.

Atashroo, D. (2017) Why sex hurts? Genito-pelvic and vulvovaginal pain disorders. Society of Laparoendoscopic Surgeons Annual Meeting and Minimally Invasive Surgery Week, San Francisco, CA.

Atashroo, D. Chao, L, Chen, CCG, Curlin, HL, Lockrow, EG, Ramirez, CI, **Senapati, S.** Stuparich, MA, Swan, KA. (2017) Teach the teacher. Laparoscopic Simulation Course, American Association of Gynecologic Laparoscopic Surgeons 46th Global Congress on Minimally Invasive Gynecologic Surgery, National Harbor, MD.

Balica, AC, Castellanos, ME, **Tu, FF.** (2017) Neuropelvelogy: A systematic approach to the diagnosis and management of complex pelvic pain and pelvic neuropathies. Postgraduate Course, American Association of Gynecologic Laparoscopic Surgeons 46th Global Congress on Minimally Invasive Gynecologic Surgery, National Harbor, MD.

Banks, E, **Atashroo, D.** (2017) Ultrasound guided peripheral nerve blocks for patients with chronic vulvar pain. American Association of Gynecologic Laparoscopic Surgeons 46th Global Congress on Minimally Invasive Gynecologic Surgery, National Harbor, MD.

Banks, E, Chen, CCG, Miyazaki, DW, **Senapati, S.** Curlin, HL. (2017) Assessing your skills with simulated vaginal and laparoscopic hysterectomy (ASSESS Course). Postgraduate Course, American College of Obstetricians and Gynecologists Annual Clinical and Scientific Meeting, San Diego, CA.

Borders, A. (2016) Illinois Perinatal Quality Collaborative's Perinatal Quality Journey. National Network of Perinatal Quality Collaboratives Kickoff Meeting, Fort Worth, TX.

Borders, A. (2016) Illinois Perinatal Quality Collaborative Severe Maternal Hypertension Initiative. Elmhurst Hospital Grand Rounds, Elmhurst, IL.

Borders, A. (2017) Illinois Perinatal Quality Collaborative Severe Maternal Hypertension Initiative. American College of Nurse-Midwives Annual Conference, Chicago, IL.

Borders, A. (2017) Illinois Perinatal Quality Collaborative Severe Maternal Hypertension Initiative. March of Dimes 42nd Annual Perinatal Nursing Conference, Lombard, IL.

Borders, A. (2017) Illinois Perinatal Quality Collaborative Severe Maternal Hypertension Initiative: Lessons Learned and Future Directions. Perinatal Quality Collaborative North Carolina AIM Kickoff Meeting, Raleigh, NC.

Borders, A, Keenan-Devlin, L, Adam, E, Miller, G, Culhane, J, Wadhwa, P, Buss, C, Entringer, S, Kuchta, K, Kim, K-Y, Simhan, H, Williamson, D, Grobman, W. (2017) Maternal childhood disadvantage, hair cortisol, and small-for-gestational-age birth. Biennial Perinatal Mental Health Conference, Chicago, IL.

Borders, A, Keenan-Devlin, L, Adam, E, Miller, G, Culhane, J, Wadhwa, P, Buss, C, Entringer, S, Kuchta, K, Kim, K-Y, Simhan, H, Williamson, D, Grobman, W. (2017) Maternal childhood disadvantage, hair cortisol, and small-for-gestational-age birth. Society for Maternal-Fetal Medicine 37th Annual Pregnancy Meeting, Las Vegas, NV.

Botros, C, Dalalo, N, Eng, J, **Iyer, S, Lozo, S, Botros, S, Tomezsko, J, Goldberg, R, Gafni-Kane, A, Sand, P.** (2017) Insensible urine loss, post-micturition dribbling, nocturnal enuresis, and coital incontinence: What does urinary incontinence mean today? American Urogynecologic Society 38th Annual Scientific Meeting, Providence, RI.

Botros, C, Dalalo, N, Eng, J, **Iyer, S, Lozo, S, Botros, S, Tomezsko, J, Goldberg, R, Gafni-Kane, A, Sand, P.** (2017) Insensible urine loss, post-micturition dribbling, nocturnal enuresis, and coital incontinence: What does urinary incontinence mean today? International Continence Society 47th Annual Meeting, Florence, Italy.

Botros, C, Dalalo, N, **Iyer, S, Lozo, S, Botros, S, Tomezsko, J, Goldberg, R, Gafni-Kane, A, Sand, PK.** (2017) Prevalence of urinary incontinence symptoms: Looking beyond stress and urgency urinary incontinence. International Urogynecological Association 42nd Annual Meeting, Vancouver, Canada.

Botros, S. Bladder neck slings. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Botros, S. Office evaluation of incontinence and prolapse. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Botros, S, DeLancey, JO, **Goldberg, RP,** Hale, DS, Lucente, V, Matthews, C, **Sand, PK, Senapati, S, Tomezsko, J.** (2017) Guided anatomic dissection and surgical anatomy of the pelvis. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Botros, S, Hale, DS, Lucente, V, Matthews, C, **Sand, PK, Tomezsko, J.** (2017) Anti-incontinence operations and complications. Surgeon's Workshop Video Presentation, Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Buss, C, **Borders, A,** Entringer, S, Culhane, J, Miller, G, Grobman, W, Adam, E, Simhan, H, Williamson, D, Kim, K-Y, **Keenan-Devlin, L,** Wadhwa, PD. (2017) Maternal childhood trauma is associated with a pro-inflammatory state during pregnancy. Society for Maternal-Fetal Medicine 37th Annual Pregnancy Meeting, Las Vegas, NV.

Byrne, J, Siddiqui, M, **Robinson, B,** Young, D, **Plunkett, B.** (2017) How capable are OB/GYN residents in counseling patients at risk for periviable delivery? The American College of Obstetricians and Gynecologists Annual Clinical and Scientific Meeting, San Diego, CA.

DeLancey, JO, **Goldberg, RP,** Hale, DS, Lucente, V, Matthews, C, **Sand, PK.** (2017) Laparoscopic and vaginal reconstructive surgery. Surgeons' Workshop Video Presentation, Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Entringer, S, **Borders, A,** Buss, C, Culhane, J, Miller, G, Grobman, W, Culhane, J, Miller, G, Grobman, W, Simhan, H, Adam, E, Williamson, D, Kim, K-Y, **Keenan-Devlin, L,** Wadhwa, P. (2017) Exposure to economic hardship during childhood is associated with immune hyper-responsiveness during pregnancy. Society for Maternal-Fetal Medicine 37th Annual Pregnancy Meeting, Las Vegas, NV.

continued

Fatunde, Y, Keenan-Devlin, L, Yee, LM, Martinez, NG, Borders, A. (2017) Increasing breastfeeding rates among low-income women via a clinic-based breastfeeding peer counselor. The Society for Maternal-Fetal Medicine 37th Annual Pregnancy Meeting, Las Vegas, NV.

Ginsberg, D, Myers, DL, **Sand, PK, Staskin, DR, Visco, AG.** (2017) Video session: Complications of prolapse and incontinence surgery. Rodney Appell Memorial Update in Gynecologic Urology 22nd Annual Conference, Grand Cayman, Cayman Islands.

Goldberg, RP. (2017) Synthetic mesh kits. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Goldberg, RP. (2017) Uterine preservation during reconstructive surgery: You might want that uterus. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Hale, DS, Lucente, V, Matthews, C, **Senapati, S.** (2017) Laparoscopic skills lab. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Hellman, K, Gebhart, G, Garrison, E, Steiner, N, Kane, J, Tu, F. (2017) Development of a paradigm to prevent bladder pain. 3rd World Congress on Abdominal and Pelvic Pain Annual Meeting, Washington, D.C.

Hill, L, **Atashroo, D.** (2017) Pelvic floor pain. American Association of Gynecologic Laparoscopic Surgeons 2nd Workshop on Surgical Anatomy of the Pelvis and Procedures in Patients with Chronic Pelvic Pain, Phoenix, AZ.

Hirsch, E. (2017) An OB/GYN generalist in the lab: Molecular mechanisms in preterm labor. Department of Obstetrics and Gynecology Grand Rounds, University of Hawaii, Honolulu, HI.

Hirsch, E. (2017) Insights into the mechanisms of infection-induced preterm labor in the mouse model: A surprising role for surfactant protein A (SP-A). American Society for Reproductive Immunology Clinical Symposium: Inflammatory Consequences and Mechanisms of Adverse Pregnancy Outcomes, Chicago, IL.

Hirsch, E. (2017) My career, how I got here and where I am headed. MiOra, a mentorship organization for high school and college students, Shriners Hospitals for Children, Oak Park, IL.

Iyer, S, Botros, C, Tran A, Botros, S. (2017) A urogynecology case based curriculum for obstetrics and gynecology residents. Council on Resident Education in Obstetrics and Gynecology and Association of Professors of Gynecology and Obstetrics Annual Meeting, Orlando, FL.

Iyer, S, Darapaneni, R, Tran, A, Botros, C, Zhou, Y, Lozo, S, Sand, P, Goldberg, R, Tomezsko, J, Gafni-Kane, A, Botros, S. (2017) Why do patients stop medications for overactive bladder? International Urogynecological Association 42nd Annual Meeting, Vancouver, Canada.

Iyer, S, Darapaneni, R, Tran, A, Botros, C, Zhou, Y, Lozo, S, Sand, P, Goldberg, R, Tomezsko, J, Gafni-Kane, A, Botros, S. (2017) Why do patients stop medications for overactive bladder? Society for Urodynamics and Female Reconstructive Urology Winter Meeting, Scottsdale, AZ.

Javellana, M, Ross, J, Liao, C, Laus, K, Alsaden, I, Yamada S, Lee, N. (2017) Clinical and pathologic characteristics of long-term survivors of type 2 endometrial cancer. WAGO Annual Meeting, Rancho Mirage, CA.

Keenan-Devlin, L, Hughes-Jones, K, Borders, A. (2017) Developing a model for hospital based breastfeeding peer counselor program. American Public Health Association Annual Conference, Atlanta, GA.

Laus, K, Gebhart, G, Garrison, E, Steiner, N, Tu, F, Hellman, K. (2017) Noninvasive objective measurement of uterine perfusion/oxygenation and the effects of naproxen. 3rd World Congress on Abdominal and Pelvic Pain Annual Meeting, Washington, D.C.

Lozo, S, Botros, C, Iyer, S, Dalalo, N, Goldberg, R, Tomezsko, J, Sand, PK. (2017) Do patients know what we are talking about? American Urogynecologic Society 38th Annual Scientific Meeting, Providence, RI.

Lozo, S, Botros, C, Iyer, S, Dalalo, N, Goldberg, R, Tomezsko, J, Sand, PK. (2017) Do patients know what we are talking about? International Continence Society 47th Annual Meeting, Florence, Italy.

Miller, ES, Grobman, WA, Culhane, J, Adam, E, Buss, C, Entringer, S, Miller, G, Simhan, H, Wadhwa, P, Williamson, D, Kim, K-Y, **Borders, A.** (2017) Do psychotropic medications reduce inflammation in women with antenatal depression/anxiety? Society for Maternal-Fetal Medicine 37th Annual Pregnancy Meeting, Las Vegas, NV.

Miller, ES, Grobman, W, Culhane, J, Adam, E, Buss, C, Entringer, S, Miller, G, Simhan, H, Wadhwa, P, Williamson, D, Kim, K-Y, **Borders, A.** (2017) Does maternal inflammation mediate the relationship between antenatal depression and adverse pregnancy outcomes? Society for Maternal-Fetal Medicine 37th Annual Pregnancy Meeting, Las Vegas, NV.

Oladosu, F, Gebhart, G, Garrison, E, Steiner, N, Tu, F, Hellman, K. (2017) Menstrual pain unresponsive to naproxen is related to low naproxen serum levels. 3rd World Congress on Abdominal and Pelvic Pain Annual Meeting, Washington, D.C.

Preyss, M, Adams, MG, Colvin, ZA, Hirsch, E. (2016) Comparing outcomes of elective induction of labor (IOL), medically indicated IOL and expectant management: A retrospective study of prospective intent. Central Association of Obstetrics and Gynecology 83rd Annual Meeting, Las Vegas, NV.

Ross, J, Escamilla, V, Lee, N, Yamada, S, Lindau, S. (2017) Endometrial cancer survivors' access to recommended self-care resources to target obesity in a high poverty urban community. Society of Gynecologic Oncology 48th Annual Meeting on Women's Cancer in a Scientific Plenary, National Harbor, MD.

Sand, PK. (2017) Biological grafts in reconstructive surgery. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Sand, PK. (2017) Critical analysis of the risks and benefits of polypropylene mesh. Rodney Appell Memorial Update in Gynecologic Urology 22nd Annual Conference, Grand Cayman, Cayman Islands.

Sand, PK. (2017) Neuromodulation for urinary and anal incontinence. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Sand, PK. (2017) Oral, transdermal and intravesical pharmacotherapy for overactive bladder. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Sand, PK. (2017) Pathophysiology and diagnosis of overactive bladder syndrome. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Sand, PK. (2017) Treatment of anterior compartment prolapse with and without adjuvant grafts. Rodney Appell Memorial Update in Gynecologic Urology 22nd Annual Conference, Grand Cayman, Cayman Islands.

Sand, PK. (2017) Understanding vulvar pain and pruritis. Rodney Appell Memorial Update in Gynecologic Urology 22nd Annual Conference, Grand Cayman, Cayman Islands.

Sand, PK. (2017) Urodynamic investigation of urinary incontinence. Rodney Appell Memorial Update in Gynecologic Urology 22nd Annual Conference, Grand Cayman, Cayman Islands.

Sand, PK. (2017) (2017) Vaginal repair of apical prolapse. Rodney Appell Memorial Update in Gynecologic Urology 22nd Annual Conference, Grand Cayman, Cayman Islands.

Sasso, K. (2017) Behavioral therapy for stress and urgency incontinence. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Schneider, P, King, PL, Finnegan, K, Goel, S, Grobman, W, Oh, E, **Borders, A.** (2017) Optimizing accuracy of birth certificates through quality improvement. Society for Maternal-Fetal Medicine 37th Annual Pregnancy Meeting, Las Vegas, NV.

Scholz, R, Smith, BA, **Adams, MG,** Shah, M, Brudner, C, **Hirsch, E.** (2017) The efficacy of a multifaceted surgical site infection prevention bundle for cesarean deliveries. Central Association of Obstetricians and Gynecologists 84th Annual Meeting, Scottsdale, AZ.

Schufreider, A, McQueen, D, Mathews, J, Liebermann, J, Uhler, ML, Feinberg, EC. (2016) Is preimplantation genetic screening with frozen single embryo transfer superior to fresh in vitro fertilization with elective single embryo transfer in good prognosis population? American Society for Reproductive Medicine 72nd Scientific Congress and Expo, Salt Lake City, UT.

Senapati, S. (2016) Effective surgical treatments for chronic pelvic pain: A discussion of the evidence. University of Chicago Department of Obstetrics and Gynecology Grand Rounds, Chicago, IL.

Senapati, S. (2017) Diagnosing pelvic pain. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Senapati, S. (2017) Nonsurgical treatment of pelvic pain. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Senapati, S. (2017) Pelvic pain: The gastrointestinal perspective. American Association of Gynecologic Laparoscopists 13th Annual International Meeting, Cartagena, Colombia.

Senapati, S. (2017). Why a gynecologic surgeon should understand the musculoskeletal exam. American Association of Gynecologic Laparoscopists 13th Annual International Meeting, Cartagena, Colombia.

Senapati, S, Chen, CCG, Donnellan, NM, Lockrow, EG, Swan, KA. (2017) Become the Master Shifu you always wanted to be. Postgraduate Course, American Association of Gynecologic Laparoscopic Surgeons 46th Global Congress on Minimally Invasive Gynecologic Surgery, National Harbor, MD.

Tomezsko, J. (2017). Estrogen effects on the lower urinary tract. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Tomezsko, J. (2017) Tension-free midurethral slings. Advances in Urogynecology and Minimally Invasive Pelvic Surgery 26th Annual Conference, Chicago, IL.

Tu, F. (2017) Dualist perspectives on solving endometriosis-related pain, a parlour conversation. Department of Obstetrics and Gynecology, University of Calgary, Calgary, Canada.

Tu, F. (2017) In search of the “big bang” for endometriosis-associated pelvic pain. Department of Obstetrics and Gynecology, University of Calgary, Calgary, Canada.

Tu, F. (2017) Reducing the burden of endometriosis through a multidisciplinary approach. Industry Satellite Symposium, 3rd World Congress on Abdominal and Pelvic Pain Annual Meeting, Washington, D.C.

Zhang, C, Cole, D, **Adams, M,** **Silver, R.** (2017) Does patient preference for female obstetrician-gynecologists negatively influence the salaries of their male counterparts? University of Chicago, Academy of Distinguished Medical Educators 11th Annual Medical Education Day, Chicago, IL.

Zhang, C, **Silver, R.** (2017) Differences in how male and female medical students perceive the gender gap in obstetrics and gynecology. University of Chicago, Academy of Distinguished Medical Educators 11th Annual Medical Education Day, Chicago, IL.

Zhou, X, McQueen, D, **Schufreider, A,** Uhler, ML, Feinberg, EC. (2016) Racial disparities: In vitro fertilization (IVF) outcomes in donor oocyte recipients. American Society for Reproductive Medicine 72nd Scientific Congress and Expo, Salt Lake City, UT.

Zhou, X, McQueen, D, **Schufreider, A,** Uhler, ML, Feinberg, EC. (2016) Impact of race on oocyte donation. American Society for Reproductive Medicine 72nd Scientific Congress and Expo, Salt Lake City, UT.

Beth Plunkett, MD, MPH
Director of Research and Clinical Associate Professor

Research Innovation Drives Improved Care

The mission of the Division of Research in the Department of Obstetrics and Gynecology is to improve the lives and health of women and their children. The Division fully supports the high-quality research endeavors that take place within the Department. The role of the Division is to enhance investigation, data acquisition, analyses and dissemination. The critical information generated from these research studies can be used ultimately to improve clinical care. Departmental research spans the depth and breadth of the field of obstetrics and gynecology and includes topics such as gynecologic pain, gynecologic cancer, maternal and fetal health, preterm birth, perinatal depression, and quality of care. Several of our research teams have experienced great success in 2017 as highlighted in this section.

Funding from the National Institutes of Health (NIH) has become increasingly competitive with fewer than 15 percent

of applicants attaining funding in some institutes. Successful funding from the NIH is a testament to the high quality of scientific inquiry that takes place in the Department of Obstetrics and Gynecology.



Director of Research Dr. Beth Plunkett

Ann Borders, MD, MSc, MPH

Principal Investigator:

- Centers for Disease Control and Prevention (CDC-RFA-DP-17-1702); State-based Perinatal Quality Collaboratives: Illinois Perinatal Quality Collaborative Grant Award to expand collaborative and implement new perinatal quality initiatives throughout the state of Illinois.
- Centers for Disease Control and Prevention (CDC-RFA-DP-17-1702); State-based Perinatal Quality Collaboratives: Mothers and newborns affected by opioids initiative.
- Illinois Department of Public Health Title V; Illinois Perinatal Quality Collaborative (ILPQC).
- Illinois Department of Public Health Title V; Mothers and newborns affected by opioids initiative.
- JB and MK Pritzker Foundation; ILPQC immediate postpartum Long-Acting Reversible Contraception (LARC) quality improvement initiative.
- March of Dimes Community Grant, Breastfeeding Peer Counselor Community Partnership to provide breastfeeding education and support to expectant mothers and families through an innovative, collaborative peer-counselor program that targets the underserved populations in Evanston and Skokie.
- North Suburban Healthcare Foundation; Breastfeeding Peer Counselor Community Partnership (BPCCP) initiative based at NorthShore University HealthSystem, Evanston Hospital.
- NorthShore Pilot Grant Award; Inflammation in group prenatal care: The PINC Cradle Study.

Co-Principal Investigator:

- National Institute on Minority Health and Health Disparities (R01MD01174901); Understanding socioeconomic disparities in perinatal risk: The role of epigenetic and transcriptional regulation in the placenta.
- National Institute of Child Health and Human Development (OD02331901); ECHO PRO research resource: A developmentally-based measurement science framework for assessing environmental exposure and child health.

Mara Dinsmoor, MD, MPH

Site Principal Investigator:

- Maternal-Fetal Medicine Units Network (60036981NUH); A randomized trial to prevent congenital cytomegalovirus (CMV) infection.

Roger Goldberg, MD, MPH

Principal Investigator:

- The risk of cognitive impairment in patients starting anticholinergic medications to treat overactive bladder: A prospective trial. Sponsor: NorthShore.

Awardee:

- NorthShore Department of Obstetrics and Gynecology Innovation Grant for development of the NorthShore Women's Health Questionnaire to collaborate across multidisciplinary specialties in the care of women.

Kevin Hellman, PhD

Principal Investigator:

- National Institute of Child Health and Human Development (R21HD081709); Neurophysiological diagnostics for menstrual pain.
- National Institute of Child Health and Human Development (R21HD091502); Noninvasive imaging of uterine physiology to improve treatment for dysmenorrhea.

Emmet Hirsch, MD

Principal Investigator:

- March of Dimes Prematurity Initiative Award; Autophagy in the Prevention and Genesis of Labor; 3/1/2016– 2/28/2017.

Jean Hurteau, MD

Principal Investigator:

- A phase III placebo-controlled study of carboplatin/paclitaxel with or without concurrent and continuation maintenance veliparib (PARP Inhibitor) in subjects with previously untreated stages III or IV high-grade serous epithelial ovarian, fallopian tube, or primary peritoneal cancer, Sponsor: AbbVie.
- Gynecologic Oncology Group (U10CA180868):
 - Gynecologic Oncology Group (GOG) 0238; A randomized trial of pelvic irradiation with or without concurrent weekly cisplatin in patients with pelvic-only recurrence of carcinoma of the uterine corpus.
 - GOG 0258; A randomized phase III trial of cisplatin and tumor volume directed irradiation followed by carboplatin and paclitaxel vs. carboplatin and paclitaxel for optimally debulked, advanced endometrial carcinoma.
 - GOG 0264; A randomized phase II trial of paclitaxel and carboplatin vs. bleomycin, etoposide and cisplatin for newly diagnosed advanced stage and recurrent chemonaïve sex cord-stromal tumors of the ovary. Sponsor: NRG/NCI.

- GOG 0274; Phase III trial of adjuvant chemotherapy as primary treatment for locally advanced cervical cancer compared to chemoradiation alone: The outback trial.
- GOG 281; A randomized phase II/III study to assess the efficacy of trametinib (GSK 1120212) in patients with recurrent or progressive low-grade serous ovarian cancer or peritoneal cancer. Sponsor: NRG/NCI.
- GOG 286B; A randomized phase II/III study of paclitaxel/carboplatin/metformin (NSC#91485) vs. paclitaxel/carboplatin/placebo as initial therapy for measurable stage III or IVA, IVB or recurrent endometrial cancer. Sponsor: NRG/NCI.
- NRG-GY005; A randomized phase II/III study of the combination of cediranib and olaparib compared to cediranib or olaparib alone, or standard of care chemotherapy in women with recurrent platinum-resistant or refractory ovarian, fallopian or primary peritoneal cancer. Sponsor: NRG/NCI.
- UC13-1000; Carboplatin, gemcitabine and mifepristone for advanced breast cancer and recurrent or persistent epithelial ovarian cancer. Sponsor: University of Chicago.
- Prophylactic salpingectomy with delayed oophorectomy, risk-reducing salpingo-oophorectomy and ovarian cancer screening among BRCA mutation carriers: A proof of concept study. Sponsor: MD Anderson.

Mary Tilley Jenkins Vogel, MD

Awardee:

- NorthShore University Research Institute, Medical Group Pilot Grant Program Award; Assessing the impact of combination therapy with metformin and statins on endometrial cancer: Implications for prevention and treatment.

Jo Kim, PhD

Awardee:

- North Suburban Healthcare Foundation; Expanding the safety net for mothers and families three-year program grant award.

Principal Investigator:

- State of Illinois Department of Human Services; NorthShore Hotline Community Services Agreement.
- The Satter Foundation; Identifying and helping women and families at risk for perinatal mood disorders, a feasibility study of computer adaptive technology for perinatal depression.
- Implications of perinatal depression screen administration. Sponsor: NorthShore.

Elena Moore, MD

Principal Investigator with effort supported by the NorthShore Auxiliary Award:

- Pilot study of the impact of early palliative care on quality of life in recurrent ovarian cancer.

Principal Investigator:

- Venous thrombosis in patients receiving extended pharmacologic prophylaxis following minimally invasive surgery for endometrial cancer. Sponsor: NorthShore
- Evaluation of clinical outcomes in ovarian cancer patients undergoing variable numbers of post-operative chemotherapy cycles following neoadjuvant chemotherapy and interval cytoreductive surgery sponsored by NorthShore Department of Obstetrics and Gynecology Innovation Grant.

Beth Plunkett, MD, MPH

Site Principal Investigator:

- Maternal-Fetal Medicine Units Network (60036981NUH):
 - A trial of pessary and progesterone for preterm prevention in twin gestation with a short cervix (PROSPECT).
 - An observational study of hepatitis C virus (HCV) in pregnancy.
 - A randomized trial of 17 alpha-hydroxyprogesterone caproate for prevention of preterm birth in nulliparous women with a short cervix (SCAN).
 - Translating research into practice in obstetrics (TRIO).
 - An observational cohort study to evaluate measures of quality of obstetric care (APEX).
 - Induction in nulliparous women at 39 weeks to prevent adverse outcomes: A randomized trial of induction vs. expectant management (ARRIVE).

Gustavo Rodriguez, MD

Principal Investigator:

- National Cancer Institute (R01CA214606); Vitamin D and Progestins for the Chemoprevention of Fallopian Tube/Ovarian Cancer.
- Development of a pharmacologic approach for the effective prevention of ovarian cancer. Sponsor: Bears Care.
- A phase III, randomised, double-blind, placebo-controlled, multicentre study of olaparib maintenance monotherapy in BRCA mutated relapsed ovarian cancer patients who are in complete or partial response following platinum-based chemotherapy. Sponsor: AstraZeneca.
- A randomized placebo-controlled phase II trial of metformin in conjunction with chemotherapy followed by metformin maintenance therapy in advanced-stage ovarian, fallopian tube and primary peritoneal cancer. Sponsor: The University of Chicago.
- National Cancer Institute 9671; Exceptional

responders pilot study: Molecular profiling of tumors from cancer patients who are exceptional responders.

- Development of a progestin-based pharmacologic approach for the effective prevention of ovarian cancer. Sponsor: The Auxiliary of NorthShore.
- Efficacy of carboplatin and weekly paclitaxel for the treatment of carcinosarcoma. Sponsor: NorthShore.
- Investigation of progesterone-mediated mechanisms of cancer prevention in the fallopian tube: Comparison of fallopian tubes from postpartum vs. nonpregnant women. Sponsor: NorthShore.
- Outpatient platinum desensitization protocol for the treatment of gynecologic malignancies. Sponsor: NorthShore.
- Sandy and Ron Schutz Ovarian Cancer Research Fund.

Site Principal Investigator:

- The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc./Department of Defense; Gynecological Cancer Translational Research Center of Excellence (GYNE-COE) (W81XWH-11-2-0131).

Peter Sand, MD

Principal Investigator:

- A double-blind, randomized, controlled trial comparing the safety and efficacy of AMDC-USR with placebo in female subjects with stress urinary incontinence, Sponsor: Cook MyoSite, Inc.
- A prospective, nonrandomized, parallel cohort, multicenter study of Uphold LITE vs. native tissue for the treatment of women with anterior/apical pelvic organ prolapse. Sponsor: Boston Scientific.
- PRospective Study to Evaluate Effectiveness with the NURO™ Percutaneous Tibial Neuromodulation System in Patients with OAB (RESET). Sponsor: Medtronic.

Frank Tu, MD, MPH

Principal Investigator:

- National Institute of Diabetes and Digestive and Kidney Diseases (R01DK100368); Deciphering the hormonal and nociceptive mechanisms underlying bladder pain.
- ICECAN: Interstitial Cystitis Effects of the Central Autonomic Network. Sponsor: Medical College of Wisconsin/NIH.

Site Principal Investigator:

- National Institute of Diabetes and Digestive and Kidney Diseases (U01DK082342); Multidisciplinary Approach to Pelvic Pain (MAPP) Network.

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- 10 Infection Control

The Department Realized Important Growth in New Members

Each is playing a critical role in realizing our goals of outstanding clinical care, leading academics and recognized research.

Valerie Allen, MD, received her medical degree from University of Toledo College of Medicine and completed her residency in Obstetrics and Gynecology at Rush University Medical Center. She is currently in practice in the NorthShore Medical Group with Drs. Suzanne Ashby, Leilah Backhus, A. Michael Drachler, Emmet Hirsch, Elizabeth Marsh, Fabio Ortega, Charla Simon, Prerna Suri, Kerry Swenson and Lawrence Yeager.

Gerald Gebhart, PhD, received his PhD in pharmacology from The University of Iowa. He is a visceral pain scientist working in the Division of Gynecological Pain and Minimally Invasive Surgery Division with Drs. Frank Tu and Dr. Kevin Hellman.

Stephanie Heraty, MD, received her medical degree from Indiana University School of Medicine and completed her residency in Obstetrics and Gynecology at Loyola University Medical Center. She is currently in practice at Midwest Center for Women's Healthcare (AGSO) with Drs. William Banzhaf, Carol Ellman, Elizabeth Forbes, Amy Henriott, Karyn Grimm Herndon, Narissa Jill Hoprasart, Jeremy Miller, Ronald Miller, Miriah Plawer and Certified Nurse Midwives Gina Marcin and Linda Given Welch.

Kelly Jacobs, MSW, LCSW, received her Master of Social Work degree from University of Chicago, School of Social Service Administration. She is a licensed clinical social worker and is serving as a Perinatal Family Support Specialist in the Perinatal Family Support Center.

Patricia Lee King, PhD, received her PhD in social work from University of Wisconsin-Milwaukee, Helen Bader School of Social Welfare. She is working in the Division of Maternal-Fetal Medicine with Dr. Ann Borders in the area of public health policy in perinatal medicine.

Isabel Lazo, MD, received her medical degree from University of Illinois at Chicago College of Medicine and completed her residency in Obstetrics and Gynecology at Kaiser Permanente Medical Center. She also completed a fellowship in Hospice and Palliative Medicine at University of California, Davis. She is pursuing Gynecologic Oncology fellowship training with University of Chicago/NorthShore Division of Gynecologic Oncology

Gina Marcin, CNM, received her Master of Science, Nurse Midwifery from the University of Illinois at Chicago. She is currently in practice at Midwest Center for Women's Healthcare (AGSO) with Drs. William Banzhaf, Carol Ellman, Elizabeth Forbes, Amy Henriott, Stephanie Heraty, Karyn Grimm Herndon, Narissa Jill Hoprasart, Jeremy Miller, Ronald Miller, Miriah Plawer and Certified Nurse Midwife Linda Given Welch.

Sara Polonsky, MPH, RN, received her Master of Public Health degree from University of North Carolina. She is serving as Clinical Manager, OB/GYN Research in NorthShore's Department of Obstetrics and Gynecology.

Mary Rigoni, CNM, received her Master of Science, Nurse Midwifery from the University of Illinois at Chicago. She is currently in practice at North Shore Associates in Gynecology and Obstetrics (NSAGO) with Drs. Gail Goldberg, Pamela Goodwin, Kim Johnson, Jean Ruth and H. Jacob Saleh and Certified Nurse Midwives Sarah Bartulis, Gaye Koconis, Debora Lesnick, Sarah Sumagin and Barbara Zimmerman-Minnich.

Javier Rodriguez Kovacs, MD, received his medical degree from Central University of Venezuela where he also completed his residency in Obstetrics and Gynecology and a fellowship in Reproductive Endocrinology and Infertility. He then came to the United States where he completed a residency in Obstetrics and Gynecology at Wayne State University. He is currently pursuing fellowship training in the NorthShore University HealthSystem/ University of Chicago Maternal-Fetal Medicine program.

Ghazaleh Rostami Nia, MD, MSPH, received her medical degree from Tehran University of Medical Sciences where she also completed her residency in Obstetrics and Gynecology and fellowship in Female Pelvic Medicine and Reconstructive Surgery. She went on to complete her residency in Obstetrics and Gynecology at Inova Fairfax Hospital and a Master of Science in clinical research from Drexel University. She is pursuing Urogynecologic fellowship training in the NorthShore Division of Urogynecology and Reconstructive Surgery.

Jean Ruth, MD, received her medical degree from the University of Chicago Pritzker School of Medicine and completed her residency in Obstetrics and Gynecology at the University of Chicago. She is currently in practice at North Shore Associates in Gynecology and Obstetrics (NSAGO) with Drs. Gail Goldberg, Pamela Goodwin, Kim Johnson and H. Jacob Saleh and Certified Nurse Midwives Sarah Bartulis, Gaye Koconis, Debora Lesnick, Mary Rigoni, Sarah Sumagin and Barbara Zimmerman-Minnich.

Ann Schufreider, MD, received her medical degree from Loyola University of Chicago, Stritch School of Medicine and completed her residency in Obstetrics and Gynecology at the University of Chicago. She is currently in practice at Midwest Center for Women's Healthcare (OGAE) with Drs. Kristin Dold Bennett, Carol Cislak, Marion Jelcz, Kenneth Nelson and Arnold Wagner, Jr.

Daniel Weiss, MPH, received his Master of Public Health degree from University of Illinois at Chicago School of Public Health. He is serving as Project Coordinator for the Illinois Perinatal Quality Collaborative (ILPQC) in the Division of Maternal-Fetal Medicine with Dr. Ann Borders.

Aisya Williamson, MHSA, received her Master of Health Services Administration degree from University of Michigan School of Public Health. She is serving as Senior Director of Women's Health in the Department of Obstetrics and Gynecology.

Obstetricians/Gynecologists, Certified Nurse Midwives and Sub-Specialists of NorthShore University HealthSystem

To refer a patient or for more information about our specialists, please call (847) 570-5020 or visit northshore.org/findadoctor

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Transforming Women's Healthcare

NorthShore University HealthSystem is steadfastly committed to serving patients, families and our community. With our team of excellent physicians and our investment in the most advanced technology, we are providing the finest in prevention, diagnosis, treatment and compassionate care to those we are privileged to serve. To learn more about NorthShore Obstetrics and Gynecology, visit **northshore.org/obgyn**.



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